INDIA RUBBER WORLD

CAOUTCHOUC
HEVEA BRASILIENSIS
GUTTA
GUTTA-PERCHA

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THE RUBBER PLANTING SITUATION.

IT is not so many years since a suggestion to plant rubber for the purpose of adding to the world's supplies of this commodity would have seemed to most people hardly more practicable than the idea of increasing artificially the supply of atmospheric air. In the first place, it would have been considered unnecessary, in view of the great areas of forest rubber; and, secondly, the idea strangely prevailed that rubber plants were not adapted to cultivation. But of late the general opinion on this subject has undergone a complete change, and to-day there is no feature of the whole rubber interest to which more widespread attention is being paid than to rubber planting.

The progress made in this direction, and the definiteness of the results attained, were particularly notable during the past year. For example, three years ago the total exports of plantation rubber from Ceylon and the Federated Malay States, in occasional small lots, from a few young trees here and there, did not reach 50,000 pounds. During 1906 the exports from the same colonies exceeded 1,000,000 pounds—all rubber of a high grade, carefully prepared and shipped systematically, and realizing the highest prices in any market. Each year has brought more trees into bearing, and a larger rate of yield from the trees first tapped, and the success of the pioneer planters has led to the investment of an immense amount of capital in new plantations, in the belief that these ultimately will prove as productive as the trees now yielding rubber.

The newer plantations in Mexico and Central America have not yet reached the same stage of commercial production, but reports continually come to hand of the success of experimental tapping, while occasional lots of plantation rubber reach the market and bring high prices. But neither in Mexico nor in the importing countries are statistics yet available of the amounts, as distinguished from "native" rubber. In several South American countries rubber planting has been begun, with commercial results already in respect of Ceará, or "maniçoba," in southern Brazil. Even in the Amazon valley interest in rubber culture has been stimulated, and some plantations formed.

In all the colonies in tropical Africa rubber is being planted, under the encouragement of the governing powers. In the Congo Free State, particularly, millions of rubber plants have been set out to comply with legal requirements, in addition to which the larger trading companies are planting rubber as a desirable means of employing part of their capital. What is being done in Africa is due to a general recognition of the fact that the native rubber species are rapidly being destroyed, and that unless plantations are formed ultimate exhaustion is certain. The Congo Free State output reached its highest point in 1901, since which time it has declined constantly. The total African

production continues large only through the exploitation year by year of new districts, to which there must in time be a limit.

It is not certain, of course, that rubber culture will prove uniformly so successful as in the Far East, but its practicability, on the whole, has been proved, and those engaged in it are to be congratulated upon the record of 1906.

THE COTTON PROSPECT.

TAKING the rubber industry as a whole, cotton is almost as indispensable to it as rubber itself. Everybody knows how important a part cotton fabrics play in the construction of an automobile tire, and similarly, cotton is required to give strength to most articles in the mechanical rubber goods branch. Indeed, when what is now called rubber belting was first produced in America, the manufacturers termed it "combination" belting, having reference to the practically equal importance of the two components, rubber and cotton. Even the everyday rubber shoe would not be possible but for the textile goods employed in its making.

Naturally, the price of cotton is a matter of great consequence to the rubber industry, the advances which have taken place in recent years having had hardly less effect than the enhanced cost of raw rubber in forcing up the selling prices of rubber goods. The consumers of rubber have had to accommodate themselves to a constantly rising price level for rubber until there is now no longer any recognized "normal" standard of cost, but all the while the hope has been entertained that cotton prices would some day sink again to what was formerly considered a reasonable figure. The realization of this hope, however, seems likely to be long deferred. The year just closed showed, as did 1905, that consumption treads so closely on the heels of production that relatively high prices for raw cotton were the logical and inevitable consequence. All estimates for the crop of 1907 point to a still larger production, but not necessarily to lower prices.

The fact is that the world is using more cotton. There are more people in the world every year; in many countries the people are coming to have greater buying power; and more tropical people are acquiring the habit of wearing clothes, and gradually of putting cotton to other uses. The increasing use of cotton is shown by the rapid growth of the cotton spinning and weaving industry in England, in America and in Asia. If the United States were to continue to be the main reliance for the supply of raw cotton, a real "shortage" would not be long in developing, but new cotton fields are being opened elsewhere, and they promise to become increasingly important.

The new mills completed or in course of erection in Lancashire last year were to contain 8,000,000 spindles, of which 2,000,000 were to spin Egyptian cotton. England imported Brazilian cotton during the first eight months of 1905 to the value of £986,900; during the same period of 1906 the figures were £6,022,100. India already is an important cotton producing country, and China is becoming such. And now in every European colony in Africa within degrees of latitude suited to cotton growing, systematic efforts are being made to introduce the cultivation of this plant. It is true that England's earnest efforts, sixty years ago, to become independent of America in the matter of cotton did not at once make India a great cotton producer, but this does not necessarily prove anything to the prejudice of her present attempts to grow cotton in West Africa.

There is, in fact, much reason to expect that the American production of cotton, without declining in volume, will before long become a relatively smaller part of the world's total. In this prospect lies the only hope now discernible of materially lower prices for cotton. And, as to lower prices, the American planter should be able, with the help of science, to continue to make a profit, regardless of any competition elsewhere.

RAILWAYS IN RUBBER COUNTRIES.

AN article printed on another page describes a certain little-heard-of station in Africa as the actual center of the Congo rubber trade. This is the point at which all produce of the Congo basin, on its way to the seaboard, is obstructed by the cataracts in the river, when it is transferred to the railway trains, which supplanted the old-time portage system, to the great benefit of commerce. There are many other rubber producing sections in which the need of a similar railway service has often been suggested, since so many rivers in those countries are blocked by troublesome obstructions. The trouble, however, is that the rubber traffic alone does not promise a sufficient return to justify the building of a rail line, say around the falls of the Madeira.

While the Congo railway has proved a profitable enterprise, it is not occupied in carrying rubber alone. Ivory, copal and other African products are conveyed over it, together with all imports into the whole Congo basin. Besides, the road serves as the sole means of transportation, for a certain distance, for the civil and military establishments of the Congo Free State. These conditions do not exist in Bolivia, for instance, nor has the government there any such monopoly of the country's resources as to enable it to turn the rubber crop to account in promoting whatever enterprises it may choose to favor.

But Bolivia fortunately has other resources than rubber, the development of which promises more to investors in transportation enterprises than does rubber. Without going into detail, it may be mentioned that Bolivia is one of the richest countries in the world

in minerals, the mining of which on a large scale has awaited the coming of better means of transportation. Whatever may be the motive for building railways in Bolivia, their operation can hardly fail to promote the gathering of rubber, for which reason there is reason to congratulate the trade over the fact that New York capitalists are now projecting rail lines meant to make both the Atlantic and Pacific coasts more accessible from Bolivia.

At the same time some very important railway extension is being promoted in the Congo country—primarily with a view to reaching mineral regions, but at the same time calculated to bring new rubber fields within closer reach. The British, who have stimulated the East African rubber trade by building the Uganda railway, will likely do something in the same line by railway building in Nigeria, just as the French have done in their West African colonies.

The point which we desire to make is that some of the greatest natural rubber fields are becoming much less remote, and under circumstances which promise rubber in greater plenty, if not at a lower cost. As everybody knows, the *crux* of the matter has been the limited supply of labor in many of the rubber states. Railway lines doubtless will prove the entering wedge of new conditions, under which life in those regions will be more tolerable for imported labor—for rubber gatherers as well as miners and traders. Much of the Amazon country to-day doubtless is as well adapted for the residence of Europeans as the Mississippi valley was 300 years ago, and we doubt very much that as many years will be required for making the South American States as populous as those on the Mississippi now are.

THE PAGES OF THE INDIA RUBBER WORLD this month present a somewhat changed appearance, which we trust will be appreciated by our readers no less than the typographical dress with which they have been familiar for so many years. The change has been made necessary by the changing conditions in the printing trade, which, like all other branches of modern industry, never stands still. It may be that, when this issue comes out in its completed form, the result will not be as handsome as we have hoped, but in any event we shall constantly strive to improve the paper in appearance as well as in its scope and the character of its contents. It may be added that the paper, in its new dress contains more reading matter than formerly.

MORE THAN ONE MILLION POUNDS OF RUBBER was shipped from the plantations in Ceylon and the Federated Malay States during 1906. This could not have realized less than $1,000,000 (gold) for the planters. At the fortnightly auctions held in London the average obtained for all grades of plantation rubber sold ranged, at different dates, from 5 shillings [=$1.21⅝] to 5s. 11d. [=$1.44] per pound, and the average for the whole year was cosiderably more than 5 shillings. Several planters have estimated their net profits on cultivated rubber at more than $1 a pound, and no doubt correctly. It is not easy always to figure the cost of produce on a new plantation, but if the actual cost were taken in the present case, it probably would not be extravagant to say that a handful of Far Eastern rubber planters have pocketed $1,000,000 in profits on last year's crop, and this is only a beginning.

THE PROGRESSIVENESS OF OUR NEIGHBORS IN CANADA has never been questioned. They were not long behind the United States in developing a rubber industry, and a new article of manufacture in this branch is no sooner introduced south of the border line than it is taken up by the enterprising factories in the Dominion. The population up there is still much smaller than ours, but it is growing, and its tendencies are in many ways like those in Uncle Sam's domain. The latest indication of this is the disposition of the Canadian newspapers to indulge so freely in talk about a "rubber trust," just as our own newspapers have been doing. And, more than this, the work of consolidating the control of rubber factories over the border seems to be in progress.

THE TENDENCY OF TRADE TO FOLLOW THE FLAG is illustrated of late by the gravitation of most of the rubber produced in the French colonies to the markets of Havre and Bordeaux, just as Portuguese rubber has long gone to Lisbon. The Congo Free State production to Antwerp and that from the British colonies to London and Liverpool. We do not know that any complaint can justly be made of this tendency, and it is referred to here only to point out that the greater the diversification of the crude rubber market, between the ports mentioned and others, the more impracticable becomes the dream of "cornering" the world's supply of rubber.

IF WE ARE TO HAVE MANY MORE "OPEN" WINTERS the rubber trade may begin to doubt the wisdom of the adage about shoemakers sticking to their last. It may be decided to be better policy for every rubber manufacturer to adopt such a diversity of production as to render him independent of any possible weather conditions. For instance, when there is not enough snow to cause a lively demand for overshoes, it would be convenient to be prepared to make tires, the consumption of which is greater in a winter favorable to motoring all season.

MEXICO MAY YET BECOME one of the great centers of rubber production from wild trees of the *Castilloa* species, plantation rubber of the same variety, and the now much talked of "guayule" rubber. And a few days ago there was offered for sale at Antwerp a ton of the "palo amarillo" (yellow tree) product. Now that the rubber culture has become so firmly established there, what reason exists for doubting that ultimately every important rubber producing species may be domesticated in some part of Mexico—the *Heveas* and all the rest?

A SNOWLESS WINTER MAKES A FINE HARVEST TIME for the waste rubber trade, particularly as cast-off rubber footwear still constitutes the most important basis for reclaiming rubber. The less snow, the fewer rubber shoes worn and thrown away, and the scarcer and higher priced the waste rubber collected in the coming spring. Rubber shoe manufacturers and dealers who find such a winter as the present has been detrimental to their profits, might do well to take on as a side line the business of dealing in old rubber.

IT IS CHARACTERISTIC OF MODERN INDUSTRIAL METHODS that they permit nothing to go to waste. It was thought that a great advance had been made when means were discovered of reclaiming rubber from worn out and discarded goods, and rightly, since this invention has been worth untold millions to the world. But now further progress has been made, in the prevention of waste, through a discovery whereby even the textile fibres in old rubber goods are rendered commercially valuable.

THRENFALL CARR'S "WHEAT RUBBER."

TO THE EDITOR OF THE INDIA RUBBER WORLD: An article going the rounds of the press refers to what is called "wheat rubber," or "cereal rubber," the invention of William Threnfall Carr, of England. Will you kindly let the rubber trade know your opinion of this material?

By the way, the same article refers to use of rubber at the present time for street paving, and also to the fact of this "wheat rubber" coming to the manufacturer as liquid rubber. I would like to know if this means rubber in cement form.

It is asserted of cereal rubber that it will stand the test of vulcanization, the writer describing vulcanization as the process of hardening through the introduction of sulphur, and he goes on to state that but three substances—natural rubber, gutta-percha, and this new product (cereal rubber)—will stand this test.

It is, of course, something new to us that sulphur is incorporated with gutta-percha, and when incorporated induces vulcanization, and that this test of vulcanization proves that gutta-percha is rubber, being one of the three substances of the rubber family, the other two being natural rubber and the new cereal rubber.

This Mr. Carr is evidently not fully conversant with the rubber business, in any of its branches, such as the mechanical line, or boots and shoes and clothing. You probably may be able to explain what Mr. Carr is endeavoring to expound to the world at this late time, so long after Goodyear, who discovered the process of incorporating sulphur with caoutchouc, passed away. We are seeking information, and we do not get it from a reading of this article.

A MANUFACTURER.

Boston, Massachusetts, January 4, 1907.

[THE so called "cereal rubber" has been widely discussed, but most of the matter that has been printed about it is manifestly absurd. Before discussing it, we may inform our correspondent that rubber has been used for paving, though only to a limited extent. In front of St. Pancreas station, in London, is a small section of rubber pavement that has been down many years, and quite recently the circle in front of the entrance of the Hotel Savoy has been paved with rubber. This pavement, however, is so expensive that it is not likely that Broadway or Fifth avenue will adopt it with the market for crude as it is.

Liquid rubber is known, but is used only for laboratory purposes. It is melted fine Pará rubber, in the form of a very thick varnish, and is used for sealing purposes.

With regard to wheat rubber, the discovery doesn't seem to be particularly new. The substance produced by treating wheat with ptyalin would be more like a glue than anything else, and undoubtedly would, after it went through the so called vulcanizing process, be like many of the cellulose products already in use. They may be prepared so as to be plastic and waterproof. They make an apparently good substitute for hard rubber, but are wholly without stretch or resilience. So far none of the rubber manufacturers have taken wheat rubber at all seriously, nor is there any likelihood that it will displace one pound of crude rubber except where crude rubber is not absolutely needed. In other words, it is the old story of another discovery of synthetic rubber. As a matter of absolute fact, synthetic rubber was made from isoprene many years ago, but only in very minute quantities and at a cost that discouraged further work along that line. So called synthetic rubber appears once in about three years, and some of the samples shown by the discoverers are far ahead of the best crude rubber; that is, in cleanliness. A curious fact about most of it is that the inventors are so anxious to produce real rubber that they imitate even the smell of the natural forest product, which, to say the least, is carrying the imitation a trifle too far.

The Carr invention, by the way, seems to have attracted an amount of attention from the press out of all proportion to its importance. The company formed to exploit it, and of which so much has been written, appears to be only a sort of promoting syndicate, with a capital stated at £5000.—THE EDITOR.]

THE ORIGINAL "WHEAT RUBBER."

AN Englishman writes to the Montreal, *Star:* "Mr. William Threnfall Carr's so called invention is nothing new, except in that it is now to be carried on commercially. The process of converting wheat into rubber was known and practiced by English schoolboys to my knowledge more than fifty years ago; indeed, I have often made wheat rubber simply by chewing the wheat sufficiently long, and rubber which would stretch, and could be made into small bladders, and which were easily broken, producing a sharp report. For this result the rubber wheat was made."

SHRUB RUBBER FROM THE CONGO.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I have been much interested in reading in your columns that the Mexican guayale rubber is taking a good position in the American market, especially as there exists in profusion in the Congo Free State, as well as in the French Congo, a shrub which yields a very good rubber. The natives dislike the work of extracting this rubber, and there is need of some practical process for getting it out more economically and in better shape. I am sending you by mail a sample of this rubber.

S. A. T.

Leopoldville, December 15, 1906.

[THE sample of rubber enclosed was fairly good, although containing considerable bark. It also shows a slight stickiness on the surface. At the present New York market it shows a value of about 90 cents.—THE EDITOR.]

DEVELOPMENT OF BOLIVIA.

THE work of construction on the first section of an extensive system of railways projected for Bolivia, and in which a New York syndicate are interested, is reported to have been begun, and important contracts for rails have been placed with the United States Steel Corporation. The enterprise is being carried out in the name of the Bolivia Railways Co., the capital of which is being supplied by the National City Bank, with which are associated the banking house of Speyer & Co. and the firm of W. R. Grace & Co., all of New York. The plans now being carried out, it is reported, will require an outlay of $35,000,000. The idea is to improve the outlet of Bolivia at least two points on the Pacific, and, by means of stretches of road around cataracts, to increase the value of the Bolivian waterways as means of transportation.

It will be remembered that when Brazil protested, a few years ago, against the cession of the Acre district to an Anglo-American syndicate, this territory was acquired by Brazil by the payment of $10,000,000, which Bolivia has pledged for the construction of railways. Besides, Brazil undertook to construct a railway around the falls of the Madeira river, thus facilitating Bolivia's access to the Atlantic. Sir Martin Conway, who obtained from the Brazilian government the historic Acre concession, in a recent address before the Liverpool Chamber of Commerce, dwelt upon the great natural wealth of Bolivia, in india-rubber and metals, and added that the prosperity of the country would depend upon the railways now being developed.

Sir Martin remarked that if the rubber exports from Brazil did not increase very rapidly, the sole reason was the difficulty of obtaining labor. Experiments had been made with some success in the importing of Japanese coolies. His own opinion was that the best man to be brought to do this easy tropical work was the Hindoo coolie, who would be found to be eminently suited to the labor, although he had never been given a trial.

The Center of the Congo Rubber Trade.

"CITAS" ON STANLEY POOL.

STANLEY POOL is of much more importance as a rubber trade center than may be generally supposed; or, rather, certain stations on Stanley Pool, which is a lake formed by the broadening of the waters of the lower Congo, just above the cataracts which obstruct the navigation of that river. This locality has been the subject of much recent mention from the fact that it is named in connection with the boundary of the rubber concession granted last fall to the American Congo Co., covering an area lying along the Congo from the Pool up to the mouth of the Kasai river.

Practically all the rubber yielded by the Congo Free State is produced above the falls, and the same is true of a great part of the rubber from the French Congo, on the opposite side of the river. In the earlier years of the Congo rubber trade, the exports of this material could be brought down the river only to the uppermost of the cataracts referred to, where the rubber would be placed on the heads of native porters and thus con-

VIEW OF CITAS, STANLEY POOL.

veyed around the falls, in the direction of the Atlantic, to Matadi, which was and is the head of navigation on the lower Congo. This was a tedious and costly means of transportation, and so long as no alternative existed, the commerce of the Congo region was necessarily of very slow growth.

In time the Congo railway was constructed, extending from Matadi, below the falls, to Leopoldville, above them—a distance of about 260 miles. This work cost a vast deal of money, owing to the difficult engineering problems encountered, but the expansion of commerce which followed its completion has made of the Congo railway a remarkably profitable enterprise. To-day all the rubber from the middle and upper Congo regions, as well as the greater part of the French Congo output, is carried for part of the way in its progress toward the seaboard by trains on this little heard of railway.

Naturally the upper terminus of the Congo railway has become the location of some important commercial enterprises, being also the lower terminus of boat transportation on the great stretches of the river that extend beyond the falls. For example, the transfer of millions of pounds of rubber every year from the steamers and other craft to the railway is in itself a large business. This is handled mainly by one company, having its location at a point on Stanley Pool known as Citas, near

REAR OF DIRECTOR'S HOUSE, CITAS.

Kinshasa, just before Leopoldsville, the last station on the road, is reached. This is known as the Compagnie Industrielle et de Transports on Stanley Pool "Citas," the headquarters of which are in Brussels.

The Citas company represent on Stanley Pool most of the rubber trading companies, taking care of the transport of their produce—including also ivory and gum copal—by rail to Matadi, where it goes aboard steamers bound for Antwerp, Havre, and Bordeaux. There appear on this page several views of the transport company's place of business at Citas, illustrating an important feature of the progress of rubber from the Congo forests to the European markets. Once below the cataracts, practically all this rubber formerly proceeded direct to Antwerp, serving to build up there one of the world's most important rubber markets. Recently, however, the French companies have adopted the policy of shipping to Havre and Bordeaux, which are becoming every year relatively more important in the rubber trade, inscription sales having been organized there on lines similar to the sales long maintained at Antwerp.

CARGO OF RUBBER AND IVORY LANDED AT CITAS.

THE CONGO RAILWAY AT CITAS.

If any one point can be referred to as the actual center of the rubber trade in the vast Congoland—a region larger than Europe—it would appear to be some where on Stanley Pool, and if a more definite location is asked for, it is not too much to indicate as the place the "Citas" site illustrated herewith.

CHANGING CONDITIONS ON THE CONGO.

A NEW convention between the Société Abir and the Congo Free State, authorized by a decree of September 12, 1906, provides that the company shall abandon the privileges granted to it under the concession of 1892. The condition is that the company shall be entitled to receive, on the quay at Antwerp, at the uniform price of 4.50 francs per kilogram (=39.4 cents per pound), all rubber which may be produced on the area covered by the Abir concession, the price to be subject to revision every five years. This agreement to be in force until September 26, 1952, though the terms may be amended at the end of each period of twelve years, on conditions which have not been made public.

A similar new arrangement has been announced in regard to the Société Anversoise du Commerce au Congo. The new convention is to be effective until December 31, 1952.

No statement yet made public serves to explain the change of status of these two companies, which are among the most important holding concessions in the *domaine privé* in the Congo Free State. The *Belgique Financière*, after quoting THE INDIA RUBBER WORLD'S statistics of the arrivals at Antwerp of rubber for the account of the various *concessionaire* companies, remarks that the falling off on the part of several of them indicates a crisis in their affairs which may call for help from the state. It regards the new conventions with the Abir and Anversoise companies as the first step in this direction, though it fails to point out the beneficial feature of the new plan of operation. The amount of rubber credited to the two companies during three years was as follows (weight in kilograms):

	1903.	1904.	1905.
Société Abir	951,000	316,918	358,673
Société Anversoise	525,500	106,380	89,510

Both the companies named here have been enormously profitable. The Abir company (Anglo-Belgian India-Rubber and Exploration Co.) has 2000 capital shares, "without designation of value." Mr. E. D. Morel, who has made a study of the Belgian Congo companies, states that the original paid up capital was 232,000 francs (=$44,776). In a single year the dividends amounted to 4,200,000 francs (=$810,600), and the shares have been quoted as high as 25,250 francs, giving a total stock exchange value of $9,746,500. In 1898 the company made a new deal with the Congo Free State, whereby the latter became possessed of one-half of the capital shares, and the state has participated in the great earnings referred to. For some time past the profits of the Abir company have been declining, and a recent quotation for the shares was 5,500 francs, or only one-fifth of the highest price recorded. A year or two ago the company made an investment in a rubber plantation in the Malay peninsula.

The Anversoise company's capital is in 3400 shares, without mention of value, though generally spoken of as 500 franc shares. This would be equivalent to $328,100. In a single year the net profits reached $769,458.55. The earnings of this company have also declined notably, accompanied by lower quotations for their shares.

The rubber shipped by these two companies to Antwerp has been among the best received at that market, the Abir company's products including the Lopori grades, and those of the Anversoise the Mongalla rubber. Most of the rubber of these classes sells at the Antwerp auctions at 10 to 12 francs per kilogram, which is equivalent to 89½ cents to $1 per pound. At a fixed price of 39.4 cents per pound to the trading companies it would seem that a very handsome profit is in sight.

RUBBER EXHIBITS AT MARSEILLES.

THE French colonial exposition held at Marseilles in September proved of much interest, and was successful from every point of view. It was particularly interesting on account of the rubber exhibits which occupied so prominent a place among the products of all of the colonies represented. Beautiful and extensive palaces were erected respectively for Indo China, Madagascar, and West Africa, and in all of these were shown specimens of rubber—forest and plantation—together with very many photographs illustrating methods of dealing with rubber in all its stages before reaching the factory. The rubber exhibit from Madagascar was notable on account of the number of different plants contributing to it, nearly all of which plants, by the way, are to be found only in that island.

By the way, Dr. Henri Jumelle, writing in *La Caoutchouc et la Gutta-Percha*, says that the black rubber of Madagascar is the product of species of *Landolphia* (creepers), "pinky" Madagascar of three species of *Mascarenhasia* (trees), and the white rubber of southern Madagascar of the *Euphorbia Intisy* (tree).

During the exposition a colonial congress was held at Marseilles, for the discussion of the development of colonial resources. Lectures of interest and importance were delivered in relation to rubber exploitation in Africa and Indo-China, and also in Central America and Brazil. The lecturers were merchants, colonial administrators, explorers, and others having practical knowledge of the topics discussed.

The congress, considering the success of the schools instituted in West Africa by M. Yves Henry, for instruction in methods of collecting, coagulating, and preparing rubber [see THE INDIA RUBBER WORLD, August 1, 1906—page 346], voted to recommend similar measures in all the French colonies. A resolution was adopted calling upon the colonial administrations to give attention to the movement of crude rubber, with a view to repressing fraudulent practices. A further resolution recommended that the chambers of agriculture and commerce established in each colony be consulted in regard to establishing stations for the examination of rubber before its export, with a view to the issue of certificates of quality of the rubber.

RUBBER EXPORTS FROM FRENCH WEST AFRICA.

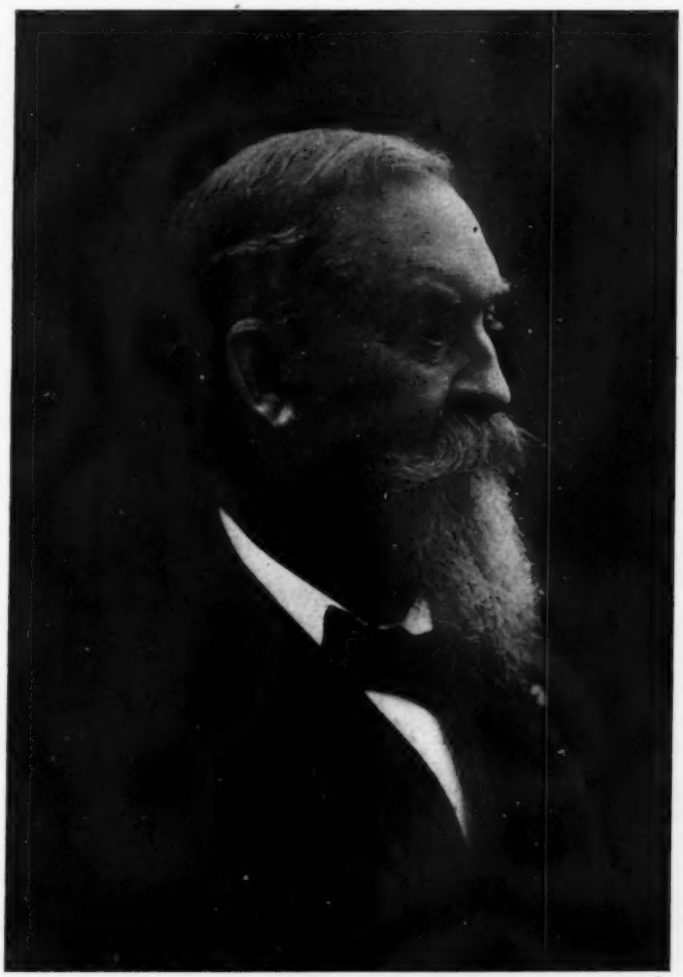
[From *La Caoutchouc et la Gutta-Percha.*]

COLONIES.	1901.	1902.	1903.	1904.	1905.
Senegal ..... *kilos.*	361,428	549,873	817,354	1,001,815	1,017,311
French Guinea	1,038,808	1,154,803	1,487,805	1,495,671	1,415,829
Ivory Coast	704,825	912,388	1,166,812	1,536,045	1,179,879
Dahomey	5,890	1,575	1,964	4,130	4,002
Total ..... *kilos.*	2,110,951	2,618,729	3,473,935	4,037,661	3,617,021

The Financier of a Great Rubber Company.

COLONEL GEORGE TOD PERKINS.

A STRONG personality which has served to give continuity to the business management of The B. F. Goodrich Co. (Akron, Ohio) since the beginning, in 1870, is Colonel George T. Perkins, who has survived all the others who were identified with its earlier years. Colonel Perkins, whose portrait appears on this page, is not a manufacturer, in the commonly accepted term, but a banker—a financier of extremely well balanced judgment—who has gradually become a shareholder and director in a number of important manufacturing enterprises, but chiefly in the Goodrich rubber company. So intimate has been his connection with the growth and prosperity of this great concern that no history of the rubber industry would be complete that failed to include some record of his life.



COLONEL GEORGE T. PERKINS.

George Tod Perkins was the son of Colonel Simon and Grace Ingersoll (Tod) Perkins, and was born on May 5, 1836, on "Perkins Hill," in Akron. The late Colonel Simon Perkins has been called the "Father of Akron," and his home, Perkins Manor, has long been one of the landmarks of the city. The mansion of the son, the subject of this sketch, now stands on the same elevation. George Perkins was educated in the public schools at Akron and at Marietta College, in Ohio.

The military title which he wears was won during the Civil War. He started for the fighting line at the first call for troops and was mustered out with Sherman's army at Washington at the close of the war, a little more than four years later. In April, 1861, he enlisted as private in the Nineteenth Regiment, Ohio Volunteer Infantry, for three months, and as second lieutenant of Company B participated in the West Virginia campaign. Later he reënlisted in the One Hundred and Fifth regiment, O. V. I., becoming its major. He commanded part of the regiment in the sanguinary battle of Perrysville, Kentucky, on October 8, 1862, two of his captains being killed, and four other officers wounded; 47 men were killed and 212 wounded. He participated in the battles of Hoover's Gap, Chickamauga, Chattanooga (where he was wounded), Mission Ridge, Kenesaw Mountain, and the siege of Atlanta. He marched with General Sherman from "Atlanta to the Sea." He was promoted to lieutenant colonel July 16, 1863, to colonel February 18, 1864, and was mustered out with the regiment June 3, 1865.

Colonel Perkins returned home to engage in business, becoming secretary to Taplin, Rice & Co., which position he held until 1870. In that year he became cashier of the Bank of Akron, and in 1876 its president. The bank becoming merged, in March, 1888, with the Second National Bank of Akron, Colonel Perkins became president of the larger institution, holding the office until March 1, 1904. At that time the Citizens' National Bank was consolidated with the Second National, and Colonel Perkins, not desiring to assume increased burdens, retired from office, though retaining a seat on the board. He was presented with a handsome testimonial by the officers and directors of the bank.

Colonel Perkins was connected with the Akron Rubber Works, later incorporated as The B. F. Goodrich Co., from the beginning, in 1870. He was treasurer and had charge of the finances until Dr. Goodrich died, in 1888, at which time he became president. The growth of the company has been steady and substantial, not having been excelled in this respect, perhaps, by any other rubber manufacturing concern in the world. The original factory was housed in a two story building, 50 by 100 feet. The plant to-day embraces many large and substantial buildings, covering acres of ground. As late as 1892 the company was capitalized at not more than $750,000, but it was doing a large business for this amount of capital. The capitalization was increased with the growth of the company's operations, until, in July, 1905, the figure was $10,000,000. The products of the factory embrace nearly everything made of rubber, and they find a market on every continent. At the annual meeting of The B. F. Goodrich Co. on January 9 Colonel Perkins resigned the position of president on account of ill health, being succeeded by Mr. B. G. Work, for some years vice president and general manager.

In 1888 the Goodrich Hard Rubber Co. was incorporated, with $300,000 capital, to make hard rubber goods. The shareholders

and the officers were the same as in The B. F. Goodrich Co., though the business was kept entirely separate. A few years ago the hard rubber company was merged with others to form the American Hard Rubber Co., with a large capital, and in which Colonel Perkins has since been a director. He is likewise a director in the Alkali Rubber Co., a large Akron concern in the rubber reclaiming business. He is interested largely in the chemical and other industries, the details of which may be spared here.

Colonel Perkins has endeared himself to the people of his native town by his liberal public spiritedness. The city has been beautified by the opening of a park of 76 acres, on Perkins Hill, which is entirely the gift of Colonel Perkins. He has been an unostentatious contributor to many charities. He has at all times taken an interest in reunions of his comrades in arms, having been president for years of the Reunion Association of the One Hundred and Fifth Regiment, and has participated actively in the Memorial Day exercises at Akron.

"Old fashioned" in his tastes is Colonel Perkins—that is, as far as dislike for ostentation or pretense goes. "New fashioned," however, in his broad grasp of affairs, quiet energy, and shrewd knowledge of men and methods. With all his business acumen, and in spite of his gathered riches, he is the same simple, sane, everyday man that he always was.

The tolerance with which he views the mistakes of others and the kindness that is so genuine a part of the man are an object lesson to the critical and the impetuous. May he live long to enjoy his well deserved laurels.

THE NEW PRESIDENT OF THE COMPANY.

MR. BERTRAM G. WORK, who succeeds Colonel Perkins to the presidency of The B. F. Goodrich Co., might be thought, at first blush, to be rather a young man for so important a position. When one remembers, however, that he is 39 years old, his birthday, by the way, falling on the day of the annual meeting that elected him to the office, it will be seen that he is not really a youth. Further than this, his experience and education have been such as to equip him naturally, easily and completely for the place. After graduating from the Sheffield Scientific School at Yale College, he entered the employ of the Goodrich company in 1887 as correspondence clerk. Later he had charge of the bookkeeping, and still later was made assistant superintendent. For nearly 12 years as assistant superintendent and later superintendent, he was at the factory every morning at 6 o'clock, often remaining until late at night, and not only thoroughly mastered every detail of rubber manufacture, as expressed in the products of the Goodrich company, but was more or less a prolific inventor and a very practical systematizer, so that even before he became vice president, which occurred some three years ago, he had proved himself possessed of a high order of executive ability. Colonel Perkins, while retiring from active work in the company, still remains on the board of directors, and the election of Mr. Work to the presidency means that all the other officers take one step in advance.

THE LATEST GOODRICH BUILDING.

THE reinforced concrete construction for great buildings is what progressive manufacturers through the United States are rapidly adopting. The illustration shows a huge new building of that construction now being erected by The B. F. Goodrich Co. (Akron, Ohio). The building has been designed by the Osborn Engineering Co., of Cleveland, Ohio, and the Frank B. Gilbreth Co., of New York. It is intended for the storage of heavy merchandise and is one of the heaviest buildings of this type ever constructed. All of the floors have a carrying capacity of 1000 pounds per square foot. The building is 127 × 75 feet, six stories in height, and will have approximately 50,000 square feet of floor space. All windows throughout the building are glazed with factory ribbed glass, and special precautions have been taken to guard against danger by fire, the stairs being entirely of reinforced concrete. The form work for the first floor was begun October 27; second story, November 9; third story, November 17; fourth story, November 24; fifth story, December 7; and the sixth story, December 11. The gross amount of materials used in the

NEW CONCRETE BUILDING—THE B. F. GOODRICH CO., AKRON, OHIO.

construction of the building was 4500 tons of Portland cement, 800 tons of limestone, 200 tons of sand, and 360 tons of steel. The entire building is of reinforced concrete construction, with brick curtain walls supported on concrete lintels.

MECHANICAL RUBBER GOODS.

HIGH-PRESSURE HYDRAULIC HOSE.

THE new conditions which have to be confronted in modern engineering operations have made new drafts upon the ingenuity of rubber manufacturers. For instance, in the construction of the tunnels now in progress under the East and North rivers, at New York, a demand has arisen for hose capable of withstanding greater pressures than have been known before in connection with the use of rubber. The experiments entered upon in this connection by the Peerless Rubber Manufacturing Co. (New York) have resulted in their being able to turn out hose which has been tested successfully for pressure up to 10,000 pounds to the square inch, whereas it is not so long since the highest pressure test recorded was about 3500 pounds. The new hose referred to is used in operating the hydraulic jacks that move the shields used in the subfluvial tunnel work, and also by some of the electrical manufacturing companies. The new Peerless hose is described as being stronger than the couplings, which stand about 7000 pounds pressure. It is understood that the Peerless company have applied for a patent on their new hose.

* * *

THE "Tuebor" brand of rubber lined cotton fire hose, made by the New Jersey Car Spring and Rubber Co. (Jersey City, N. J.), is approved by the Associated Factory Mutual Fire Insurance Companies and the National Fire Protection Association, for factory and mill protection. It weighs 40 pounds per section and is guaranteed to withstand a pressure of 400 pounds.

* * *

THE Garlock Packing Co. (Palmyra, New York) have obtained the exclusive selling agency in the United States (east of the Rocky mountains), and in Mexico and the West Indies, for the "Tauril" sheet packing, which is claimed by many foreign experts to be the finest packing of its kind made. It is recommended for gas engine work and for superheated steam, air, water, and oil; it has great tensile strength, and is made in any thickness.

The India-Rubber Trade in Great Britain.

By Our Regular Correspondent.

IT is matter for satisfaction that a greatly improved tone is apparent in this branch. The demand for heavy coats for motorists has a good deal to do with this. There is also, it appears, a reaction among men in favor of the macintosh as being more satisfactory than the rainproof coats, especially the low class qualities. Although the various means which have been put forward for ventilating rubber clothing have resulted in the failure to which they were foredoomed, the alternative of reducing the weight has been largely adopted, and has resulted in a gratifying increase of business. Where complaints are rife is in the ladies' waterproofs; though I don't profess any knowledge of the matter myself, I am informed by a manufacturer that rubber waterproofs are not now being worn, and that this state of things ought to be altered as a distinct menace to the well-being of the trade.

THE WATERPROOFING TRADE.

With regard to machinery the Rowley and Walmsley double deck spreading machine seems to have borne out what was portended of it in the way of economical working, and another one has recently been built embodying one or two further improvements. Similar success has attended the Frankenstein and Lyst patent spreading machine, which has fully substantiated the patentees' claims during the years it has been working. Owing to the vagaries of feminine fashions, the production of color printed single textures has shrunk a good deal during the last two years. As practically all of the double proof textures are vulcanized by dry heat, this means that the sincaloring process has very little application at the present time. Considering the litigation which once occurred as to patents rights for this or that medium for facing the single texture before printing, it is interesting to note that more of the printing is nowadays done without the use of any powder; that is, the colors are printed direct on the rubber surface.

A point about proofing trade of somber interest to the rubber expert is that since the use of the dry heat vulcanization process became general there has been a cessation of the lawsuits which at one time were such a feature of the trade. At the present time the manufacturers have the experience of the past as a guide to their actions, and this, coupled with the practical abandonment of the cold cure process, has very greatly minimized the amount of defective work.

THE patent rights for this process, which has been previously referred to in these notes, have now passed into the hands of Mr. J. E. Baxter, of the Leyland and Birmingham Rubber Co., Limited. This applies not only to the British rights, but in all countries where patents have been taken out. A new factory is now in course of erection at Leyland, where the system will be worked on a large scale by J. E. Baxter, Limited, the company previously known as the Dialene Co., manufacturers of a specially reclaimed rubber. The original Penther machine is now being brought over from Germany and will be erected in the Leyland factory. As regards foreign countries, I understand it is the intention of the Leyland firm to grant licenses on terms which consist of the company supplying the machine (which costs about £2000) and taking a certain share of the profits resulting from its operation. Without going again into the details of the process, it may be repeated that fiber is completely separated from the ground rubber by air current, and is recovered in the form of fluff which finds a ready sale to felt manufacturers and upholsterers at a remunerative price. It is hardly necessary to say that in all other processes as now worked the textile material is destroyed by means of either acid or alkaline solutions. In the Penther process this expense and that of the subsequent washing and drying is done away with, and in addition there is a saving in time. The capabilities of the Penther process do not, I understand, admit of armored hose being treated direct, and presumably the iron wire, both external and internal, will have to be removed before the scrap goes into the machine. With regard to this class of waste rubber it seems to be about the only sort which has not shown a rise in price during the last two years, whereas most scrap has gone up considerably.

PENTHER'S RUBBER SCRAP PROCESS.

THE author of the book recently brought out under this title is Mr. E. D. Morel, the honorary secretary of the Congo Reform Association, in England. The Congo situation is attracting great attention in this country, where Mr. Morel has addressed large meetings in many of the principal towns. I heard him recently address a meeting on the subject, and the fervor of his denunciation of the King of the Belgians was something to be remembered, not only for the zeal displayed in championing the cause of the rubber gatherers, but also for the scholarly elocution in which the philippic was rendered. From what Mr. Morel says in his speeches it is evident that he looks upon the recent grant of Congo land to an influential American syndicate as an astute move calculated to stem the tide of indignation in the United States and to prevent the harmonious working together of Great Britain and America in the forthcoming political proceedings. In Gustave Van der Keickhove's interesting communication to this journal in 1904 on the coagulation methods in operation in the Congo Free State he states that practically the only advantage accruing from European supervision has been the cessation of adulteration. According to Mr. Morel's book, this has been brought about by the somewhat drastic punishment of making offending collectors drink the latex which they have adulterated.

"RED RUBBER."

THE name of Reddaway in connection with belting is so well known that any new departure from established procedure in the manufacture is sure to be of interest. It is well known that in some climates, in India especially, the very heavy dews saturate cotton belting to such an extent that it is some time before work can be proceeded with in the morning. Though the camel hair belting shows this disadvantage less than many brands of belting, Messrs. F. Reddaway & Co., of Manchester, have recently patented a belting which does away with the trouble altogether. To this the not very euphonious name of "choucamel" has been given, the improvement consisting of a layer of vulcanized rubber on both sides of the ordinary camel hair belt. By this means it is contended that, while the ordinary advantages of camel hair belting are maintained, it is now rendered quite proof against the troubles incidental to textile belts working in moist climates.

CHOUCAMEL BELTING.

A GOOD deal has been written about this new form of motor 'bus tire in the automobile journals recently, though I have not so far come across the name of Messrs. Iddon Brothers, of Leyland, the rubber machinists, as having been concerned in its development, the design of the steel wheels having been worked out by them after a considerable amount of experimenting. The main feature of this tire is, of course, that the rubber is made in segments which can easily and expeditiously be moved about according as they get worn in any particular place. This work can be carried out at the garage without sending the tire back to the makers. The arrangement of the rubber segments may be carried out in various ways. In fact, I believe I am right in

THE HARTRIDGE TIRE.

saying that 20 or 30 variations have been experimented with. In connection with the experiments a good deal of interesting information was obtained as to the behavior of the rubber blocks under the pressures they experience in these wheels. For instance, it was found that rubber made up from calendered sheet, as in the case of a buffer, was quite unsatisfactory, and a different method of preparation had to be adopted. One of the principal claims of this tire to notice is that it does not skid, and if this is fully borne out in practice it should have a great future, now that it has been stated by ministers in Parliament that the London commissioner of police will make non skid tires compulsory on 'buses in the London streets as soon as a satisfactory tire is produced. Besides being fitted to steel wheels, these tires are also being supplied by Messrs. A. Scammell & Nephew, of Spitalfields, London, fitted on wooden wheels, and the makers are prepared to supply tires and wheels complete on maintenance contracts at 2 pence per mile.

JAMAICA RUBBER.

A FRIEND of mine who has had a good deal to do with planting in Jamaica recently gave me a sample of remarkably strong, clean rubber which was obtained in the island. A sample which was submitted to Kew was stated to be the product of a creeper, probably the *Forsteronia floribundo*, an account of which in connection with Jamaica rubber generally is to be found in the *Kew Bulletin*. Up to the present the rubber vines in Jamaica have been used only as binding material, no rubber being exported from the island. The sample in my possession was coagulated by exposure to the sun and is certainly of very good quality, though sufficient is not available for practical tests. Jamaica has been described as a land of small things, and as the native creepers could hardly be successfully cultivated it appears that any forest rubber industry would only be short-lived. It is suggested, however, that the rubber vines will probably be found more plentiful in Hayti and San Domingo, which might then become the source of a remunerative industry. If rubber planting is to take place in the West Indies attention will of course be paid to the Pará tree, and in connection with this a Jamaican planter of experience recently wrote to a London paper advising British capitalists or young planters to note the potentialities of the West Indies for rubber planting.

INSTANTANEOUS DISENGAGING GEAR.

ELECTRIC driving is only to be found in one or two of our rubber factories, but its advantages in the case of accidents to workmen are certainly a strong point in its favor which does not seem to have had attention drawn to it. At the works of the Leyland and Birmingham Rubber Co., where electrical power is largely employed, an ingenious contrivance, in form somewhat like a fire call, is placed in close proximity to each washing and mixing roll. Should an accident occur, breaking of the glass instantly cuts off the electric current, thus ensuring complete stoppage of the machinery. In the case also of the steam driven machinery at the same factory a similar electrical contrivance connected up to the engine causes steam to be shut off instantly in case of need. So far any such safety gear is not compulsory in Great Britain, as in Germany, Austria and Belgium.

AN importation made by the Bishop Gutta-Percha Co. (New York) was assessed for duty as a manufacture of gutta-percha, against which the importer protested. The protest was sustained by the United States general appraisers in a decision which states that the merchandise in question "consists of gutta-percha put up in the form of sheets and apparently having undergone a process of purifying, advancing it from its crude condition." It could not he learned just what treatment the material had received. The decision concludes: "Unquestionably it is not in the crudest form in which gutta-percha may be procured, but the most that can be said of it is that some of the impurities have been removed; it is still gutta-percha, and cannot, in any sense, be said to be a manufacture thereof."

RUBBER INTERESTS IN EUROPE.

DUNLOP REORGANIZATION.

THE appeal of the dissatisfied shareholders in the Dunlop Pneumatic Tyre Co., Limited, against the proposed reorganization plan having been withdrawn, the reduction of capital as sanctioned by the court will be proceeded with. The readjustment of classes of capital is indicated by these figures:

	Present.	Proposed.
Preference shares	£1,000,000	£1,000,000
Ordinary shares	1,000,000	625,000
Deferred shares	2,000,000	500,000
Total	£4,000,000	£2,125,000

The reduction is made on account of the writing off from the company's asset sheet of a large sum representing "good will," in view of the expiration of the basic patents under which they operated so long.

NO MONOPOLY OF THE NAME "DUNLOP."

IN the court of session of Scotland, in an action brought by the Dunlop Pneumatic Tyre Co., Limited, to restrain the Dunlop Motor Co., Limited, from the use of the name "Dunlop" in connection with the sale of motors and tires or other accessories, it was held that proof was lacking that the business of the respondents had been organized "for the purpose of passing off their goods as and for the goods of the complainers, and for the purpose of taking advantage of the reputation which the goods manufactured and sold by the complainers had acquired." The Dunlop Motor Co., Limited, is composed mainly of persons of the name of Dunlop, and was formed to succeed to the business of R. & F. J. Dunlop. The court recognizes the right of these persons to trade under their own name, regardless of the fact that some of the goods they handled might be of the same class as the products of the Dunlop Pneumatic Tyre Co., Limited.

GREAT BRITAIN.

WHILE the works of The Dermatine Co., Limited (London) were closed, during the recent holiday season, the opportunity was taken to repair the main Dermatine driving belt, which has been in use for 21 years, without previously having been repaired. The belt is 24 inches wide and weighs nearly 13 hundredweight.

The directors of the Amazon Steam Navigation Co., Limited, have declared a dividend on account the current year of 2 per cent, or 5 shillings per share, payable on and after January 4, 1906.

The accounts of the Amazon Telegraph Co., Limited, the company operating the Pará-Manáos cable line, for the year to June 30, 1906, after providing for the debenture interest, show a surplus of £3623 (=$17,631.33), thus reducing the debit balance brought down to £74,607 (=$363,074.97). The company was formed eleven years ago, with £250,000 capital, and the debentures outstanding amount to £255,000.

At the annual meeting of the Liverpool Electric Cable Co., Limited, a dividend of 7½ per cent was declared. During the year the company's plant was nearly doubled. This company is an outgrowth of the Liverpool Rubber Co., Limited, with which it is affiliated.

Mr. C. W. Edmonds, European manager of the Home Rubber Co. (Trenton, New Jersey) at Balfour house, Finsbury pavement, London, E. C., was a recent visitor to the home offices.

GERMANY.

THE American Association of Commerce and Trade, at Berlin, now in its fourth successful year, has a membership divided equally between American and non American firms. Recent accessions to membership have been Continental Caoutchouc-und Guttapercha-Compagnie and the Hannoversche Gummikamm-Compagnie, both of Hanover.

Progress of Rubber Planting.

RUBBER PLANTATIONS IN PARA STATE.

THE planting of rubber seems to have received more attention in the Amazon Valley than has been generally known. Reference was made in THE INDIA RUBBER WORLD last month to the serious treatment of this subject in the recent annual messages of the governors at Pará and Manaos. Since then a copy of the *Folha do Norte*, of Pará, comes to hand with an article on plantations of rubber already established in the Amazon region.

The information is gained from a Senhor Moura, a Portuguese for 12 years manager of a rubber *seringal* (camp) at Porto Alegro, on the river Madeira, owned by a mercantile house. A dozen or more Brazilians are mentioned, mainly in the Manicoré district, who have planted more or less rubber. One plantation is mentioned as dating from 1886, though for the most part the trees under cultivation are about three years old, at which age a height of 5 meters is reached. Some of the planters named have 2000 or 3000 planted trees each, and one is named with 20,000 trees. Generally, according to Senhor Moura, the planting has been done by merchants, and the progress made has been such as to encourage them to continue planting. In addition to what is reported above, *Folha do Norte* says that it is well known at Pará that rubber has been planted on several foreign owned estates in Brazil.

HAWAIIANS PLANTING IN THE MALAY STATES.

THE Pahang Rubber Co., Limited, incorporated in the territory of Hawaii, with $150,000 capital, have leased 2000 acres in Pahang, one of the Federated Malay States, on which to establish a plantation of *Hevea* rubber. The program for 1906 called for the planting of 200 acres, and it is planned to have 1000 acres in rubber within three years. Dr. E. C. Waterhouse, of Honolulu, is president of the company; D. P. R. Isenberg, vice president, and Fred T. P. Waterhouse, secretary and treasurer. The manager on the estate is George M. Hording.

PLANTING "CASTILLOA" RUBBER IN COLOMBIA.

WRITING from Quibdo, in the valley of the Atrato, in Colombia, on the planting of *Castilloa* rubber in progress there, Mr. J. E. Diaz predicts that within five years there will be more than 3,000,000 trees under cultivation. This region was referred to at length in THE INDIA RUBBER WORLD of December 1, 1905 (page 75), and a map given, showing the location of several plantations of rubber. Mr. Diaz gives the extent of several of these, as follows: Meluk & Co., 150 acres; Abuchar Hermanos, 260; Henry G. Granger, 560; Juan C. Olier, 350; Tomas Guerrero, 270; Juan L. Castro, 290 acres. The most important of all, it is stated, is "La Felicia," owned by Gonzalo Zuniga, on which there is 1000 acres of rubber from one to four years old.

A FAR EASTERN SCARE AT AN END.

CERTAIN reports which were cabled around the world not long ago relative to an alleged "rubber trust," designed to "corner" the entire supply of crude rubber, gave some concern to the planting interest in the Far East. The basis of the report was the strengthening of the European end of the organization which supplies raw material for the United States Rubber Co. and its constituent companies. *The Straits Times*, of Singapore, after an investigation of the "trust" rumors, disposes of the matter in an editorial which concludes as follows: "Reuter wired the news of an attempted or concluded operation in the corner line, and set everybody out here wondering how a corner would affect their interests in rubber. It is evident now that no corner has been attempted or intended, and all that has taken place has been a legitimate effort on the part of an amalgamation of rubber companies to secure a sufficiency of that commodity to meet requirements."

MEXICAN PLANTING NOTES.

THE shareholders in The Tehuantepec Rubber Culture Co. (New York) have elected as official inspector, to visit Plantation "Rubio" this year, Mr. A. St. John Whiting, of Boston, who was to start for Mexico during January.

The Grijalva Land and Coffee Co., Limited (Chicago) hope to complete this year the planting on the tract known as the Montezuma plantation in Chiapas, Mexico, of some 1000 acres of *Castilloa* rubber. Part of the rubber already planted is now about six years old, and about 400 acres two years old.

Professor L. A. Ostien, widely known for the work he has done in the State Agricultural School of Utah, and who is familiar with Mexican planting, lately returned from a tour of the "hot country," making frequent stops between Orizaba and the Isthmus of Tehuantepec. He was impressed particularly with the rubber prospect in the region surrounding Santa Lucretia, on the isthmus. He writes: "There are many groves of cultivated rubber containing from 100,000 to 1,000,000 trees. While most of this is young, the trees from 5 to 8 years from seed are being tapped with very satisfactory results. In this section there are many wild rubber trees that have escaped the axe of the native."

Joaquin Miller, of California—the venerable "Poet of the Sierras"—is now something of a rubber planter. He owns a ranch in Mexico, where he spends his winters, and rubber is one of the crops under cultivation.

THE MACHETE FOR TAPPING RUBBER.

THE machete as a tapping tool has many friends and an increasing number of enemies. The native rubber gatherer, of

RUBBER TREE CUT BY A MACHETE.
[*Castilloa* tree tapped in June, 1905. Photographed April 10, 1906.]

course, believes in it because it's the only tool that he understands for any purpose. In certain sections it seems that whatever he does to the *Castilloa* trees, for example, is productive of no harm.

In parts of Panama the trees are butchered in the tapping and still are thrifty. In Guatemala the natives who have small plantations of their own often cut steps to the upper reaches of the tree with the machete and the tree never rots, nor is it attacked by insects.

On the Mexican plantations, however, it is almost the universal belief of the planters that almost any tapping by the machete is damaging. The illustration shows a tree on one of the best of the Mexican plantations which was tapped carefully by a skillful machete artist, but in spite of all care insects got into the cuts and injured the tree and not only that, the bark, instead of drawing together and healing, spread apart, leaving the bare wood exposed.

FEDERATED MALAY STATES.

REGARDING the Lanadron estate, in the Federated Malay States, the exhibit from which took the highest award at the Ceylon rubber exhibition, a London newspaper says: "Two sons of Mr. Andrew Pears, of the great soap-making firm, are part owners, and Mr. Frank Pears is the manager. This firm may perhaps be considered as the pioneers of the rubber industry in the Malay peninsula. Besides Lanadron, Mr. F. Pears is superintending the planting of another large estate. When he first went to Lanadron he had to go 250 miles up river in a common boat. The climate is not so hot as that of Calcutta, but its great humidity has to be fought against. It was formerly all jungle where these plantations now are."

The report of the first year's working of the Federated Malay States Rubber Co., Limited—the company owned at Antwerp—shows 13,322 pounds of rubber to have been gathered from 10,453 trees on their West Country estate, in Selangor. During the first six months of the second year, it is stated, 16,300 pounds were obtained from the same trees. The majority of the trees are said to have been less than 7 years old at the beginning of the work. These figures are so large that the suggestion has been made by some planters that the trees referred to must have been overtapped.

The Tampoy Rubber Co., Limited, has been incorporated at Singapore, with a capital of 350,000 British dollars, to purchase a rubber property in the Malay States, the vendors accepting $100,000 in shares in part payment.

The success of the recent Ceylon rubber exhibition has given rise already to the discussion of plans for another show of the same kind, and some of the Far Eastern newspapers consider it as practically settled that one will be held within the next three years, most probably in the Malay States.

Some leading firms of Colombo (Ceylon) are establishing branch houses in the Federated Malay States, and better shipping facilities to the latter region are in prospect, on account mainly of the growing importance of the rubber planting interest there.

The Vallambrosa Rubber Co., Limited, operating a plantation in Selangor, pay an interim dividend for their second year at the rate of 30 per cent per annum.

A PLANTATION IN GUATEMALA.

THE Compagnie Franco-Belge du Guatemala has been formed at Brussels with a share capital of 2,000,000 francs [=$386,000] to acquire and work estates in Guatemala and cultivate india-rubber. One-half of the share capital of the new company has been subscribed by a Paris financial group, while the remainder has been taken up by the Compagnie Belge de l'Amérique Centrale, which has increased its share capital by 1,000,000 francs for this purpose.

CULTIVATED RUBBER FROM AFRICA.

THE INDIA RUBBER WORLD is in receipt of samples of cultivated Ceará rubber from four year old trees on a small plantation known as Senigalla Farm, Fort Jameson, Northeastern Rhodesia. The rubber was air dried and worth at the present market 90 to 95 cents.

PLANTING IN SAMOA.

THE Tiavi-Kautschukpflanzungen aus Samoa, with a capital of 1,000,000 marks [=$238,000], has been formed in Berlin. The purpose is to plant to rubber 3600 acres on the south side of Upolu, one of the Samoan islands.

Three *Hevea* rubber trees on the plantation of T. Andrew, near Apia, Samoa, aged 6 years 3 months from the seed, were tapped four times, between March 10 and April 10, 1906, and yielded a total of 9 ounces of dry rubber. The trees measured in girdle 24½ inches, 23 inches, and 21½ inches. Of the total yield, 37 per cent was obtained from the smallest tree, on which alone the spiral tapping system was used.

PLANTATION RUBBER FROM MEXICO.

THE illustration herewith is from a photograph of the first consignment of plantation rubber from the estate of The Oaxaca Association, of Chicago, at Buena Ventura, State of Vera Cruz,

PLANTATION RUBBER FROM MEXICO.

Mexico. The weight is 285 pounds. The rubber was obtained from cultivated *Castilloa elastica* trees, 7 to 9 years old, the average yield, from one tapping, being 2 ounces. The company will have 400,000 rubber trees 7 years old by 1909.

GRADES OF PONTIANAK.

A FIRM in New York offering quotations on different grades of pontianak (gutta-jelutong), and being asked for a description of the difference, advises THE INDIA RUBBER WORLD: "There are several grades of pontianak, but the two most commonly used are the regular pontianak and the plantation, which is often called an old fashioned quality. It comes in large loaves and is generally very uniform in quality. The price is about one half cent higher than regular fair average quality."

On the same date there comes to hand a copy of the Singapore *Agricultural Bulletin*, in which appears this note by the editor, Mr. Henry N. Ridley: "Jelutong comes now largely from Sumatra, as well as Borneo. Mr. Gustav Fischer, of Palembang, tells me the Sumatra jelutong is preferred by dealers now. He has been tapping trees after the style used in Pará rubber trees, and is obtaining improved samples. The tree is abundant in the [Malay] peninsula, but seems here to be quite neglected."

AMERICAN IMPORTS OF PONTIANAK (IN POUNDS).

1903	10,994,437	1905	25,369,473
1904	14,867,007	1906 (11 months)	13,977,832

Tires at Madison Square Garden.

THE Madison Square Garden automobile show (January 12-19) was by far the best ever held in New York, both in the matter of cars and accessories, in completeness, in attractiveness as a spectacle, and in point of attendance. The extension of the first balcony into a flying stage, for car exhibits, was not favorable for attractive attention to the accessories, though this does not mean that the ires were negleced. The bad weather cut down the number of curbstone exhibits outside, though the private exhibits in the neighboring shops more than took up the slack. The Garden, large as it is, was too crowded, and this, together with the increasing tendency to make the show a society affair, rather interfered with its business purposes. The crowd hung about the cars, only a small part of them finding their way into the galleries, where most of the accessories were.

The exhibits of tires and rims showed the tremendous influence of the Vanderbilt Cup race. Detachable flanges and removable rims were everywhere, and attracted more attention than the tires, though practically all of the patent rims are owned by the great tire companies. Antiskids were not numerous or conspicuous, these being, except for the Midgley and Bailey types, closely modeled upon the European makes. The Jeuatzy antiskid tire was exhibited on the curb, on a Peerless car. It was also interesting to see that the Weed chain was used on nearly all the demonstrating cars, being the only antiskid which could handle the deep snow. Even Bailey treads were seen with chains on them.

Five new tires were exhibited for the first time: the Trident tire and rim, the Dow selfsealing tube, the Punctureproof tire, and the Pullman and Schneider spring tires. The Republic Rubber Co. have made so many changes that their tire might properly be called new, as well as their new detachable flange. The Shaler electric vulcanizer was also exhibited for the first time. The Diamond Rubber Co. received a sample of their new antiskid during the Palace show, in December, but hardly in time to advertise it fully. It drew much favorable attention at the Garden, being much like the Continental tread. The Pennsylvania Rubber Co. showed their new antiskid, which is a close copy of the Michelin studded leather tread. The Firestone Tire and Rubber Co., the Pennsylvania Rubber Co., the Ajax-Grieb Rubber Co., the Harburg Tire Co., and the Fisk Rubber Co. each showed a new detachable rim.

The Trident tire is characterized mainly by its thickness—in tread, walls, and bead—almost approximating the cushion type. Both this and the Republic tire have square edges, meeting in the middle, Fisk-like, the idea being to prevent rim cutting and to make the tires waterproof. The Republic tire has its toes tipped with soft rubber, to better gain this waterproofness.

The Dow inner tube is reinforced over the outer half of its surface, the space between the two layers being filled with a simple compound, such as a pulp of paste and fiber. Though the public were rather indifferent toward all accessories this tube drew much attention, practical tests demonstrating that it would bear frequent punctures without loss of air. It fits any tire.

The Punctureproof tire is a split clincher cushion tire, the support coming from the thickness of the walls, and side cracking being prevented by several plies of canvas, according to size.

The Pullman tire depends upon coiled springs for its elasticity, the whole being covered by a rubber tread and side flaps.

The Schneider is a rather heavy spring tire, in which the resilience is derived from replaceable rubber arches.

The Traction Tread tire has cut off its characteristic projecting tread, decreased the depth of the corrugations, discarded the rigid tread idea, and thickened the walls and beads, thus approaching the standard flat tread type.

The other tires remain much the same, the several makers duplicating here their exhibits at the Palace show a month earlier. Nearly all are offering flat treads and Baileys. The Diamond Rubber Co. are making a Fisk type, and the International Rubber Co. are making Dunlops. The Firestone Tire and Rubber Co. are extending their clincher type. The Sager Tire Grip is new, differing from the Weed chain grip mainly in the side holding, the side chain being replaced by a perforated steel band.

In the matter of rims there was much that is new. The Fisk removable rim, invented by Superintendent J. C. Cole, of the Fisk Rubber Co., is characterized by its great convenience. The valve being nonprojecting, the rim can be slipped on the wheel in any position, where it is held by an outspreading prismatic ring, the expansion being gained by forcing the split ring up over an inclined plane by means of felloe bolts.

In the Pennsylvania removable rim the felloe band bears several countersinks, and lock slots, which receive corresponding offsets on the rim. In attaching, the rim is slipped on the felloe band and turned slightly, which moves the offsets into the lock slots. Two felloe bolts further secure the rim.

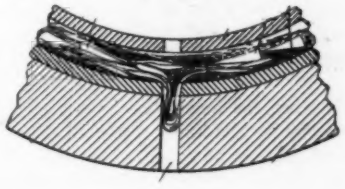
The Firestone Tire and Rubber Co. showed a rim in which the detachable flange is endless and provided with two spurs, the flange being held on by a split locking ring. The valve also carries a spreading lug. The flange is put on so that the spurs will be opposite the spreader. The ends of the locking ring have holes to receive the flange spurs, where they are held by the spreading lug.

In the Republic Tire Co.'s rim the detachable flange has a downset which fits against a similar downset on the rim. The

THE DOW TIRE—PROFILE.

two downturned edges are then clasped by a half-hollow split ring, the ends of which are then held by bolts.

The Trident Tire Co. offered a simple and efficient rim, in



THE DOW TIRE.

[Showing action of filling material in case of puncture.]

which the detachable flange has an offset underneath, this offset being engaged by felloe bolts with square washers. This rim was much admired.

The Ajax-Grieb detachable flange is slotted underneath, as is also the flat rim. An easily detached split locking ring fills these corresponding slots on the tongue and double groove principle.

The show was the seventh held in the Madison Square Garden, and the second held under the auspices of the Association of Licensed Automobile Manufacturers. There were 249 exhibits, 45 of motor cars and 204 of accessories. Of the cars shown, 216 were pleasure vehicles and 22 for commercial use. Twelve of the makes of cars shown were foreign. The various foreign tires now on the American market were also represented.

A NEW AMERICAN MICHELIN AGENCY.

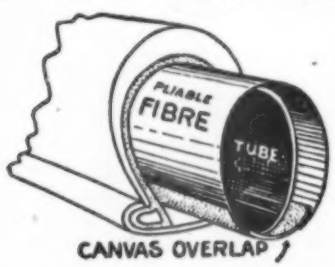
EMILE LAMBERJACK, of Paris, who for several years has been the sole export agent of the tire product of Michelin et Ciè (Clermont-Ferrand), has formed a new company and taken over the rights, effects, and good will of the Michelin Products Selling Co., Inc. (Nos. 31-33 Thirty-first street, New York), hitherto the exclusive representatives of the Messrs. Michelin in America. The new company will be known as E. Lamberjack & Co., Inc., and will occupy the offices and salesrooms at the location named above. Under the new arrangement Michelin et Ciè will deal directly with their patrons in America, and it is intimated that a lower scale of prices on their tires will go into effect. The Lamberjack company is incorporated under the laws of New York, with $10,000 capital. The incorporators are: J. E. Lamberjack, Paul La Croix, and M. G. Bernin. The same interests, under the name Franco-American Auto and Supply Co., at Chicago, will be distributors of Michelin products in the central and western states.

NEW TIRE DEPOT IN NEW HAVEN.

THE Colonial Rubber and Lumber Co. has been incorporated at New Haven, Connecticut, with $25,000 capital authorized. George H. Rynedance is president, Dr. William F. Verdi, vice president, and George Bryning, secretary. The company controls the New England representation of the Pennsylvania Rubber Co. (Jeannette, Pa.), and will build up a wholesale and retail business in rubber tires and mechanical rubber goods, at Nos. 494-496 State street. The company succeeds the Springfield Rubber Tire Co. and the New England Tire and Rubber Co., both of New Haven. The company will also do a wholesale lumber business, making a specialty of mahogany.

"INNER SHOE" TIRES.

THE Inner Shoe Tire Co. (Grand Rapids, Michigan) are producing an inner shoe made of a specially thin 12 ply laminated fiber, which is said to have great strength, coupled with pliability. This fiber is formed by machinery into full smooth tire shape with canvas overlaps, which latter are designed to prevent or hold rim cuts. It is made self-cementing by having its outer surface given a coat of special cement, which, when the inner shoe is in use, first softens and then sets, thus making the lining a part of the tire. The inner shoe is inserted just as an inner tube would be. These new shoes are made in sizes to fit any ordinary automobile tire. The same company also makes fiber treads to go inside the tires, and repairs patches for both inner and outer application.



REUNION OF THE OLD DUNLOP TIRE STAFF.

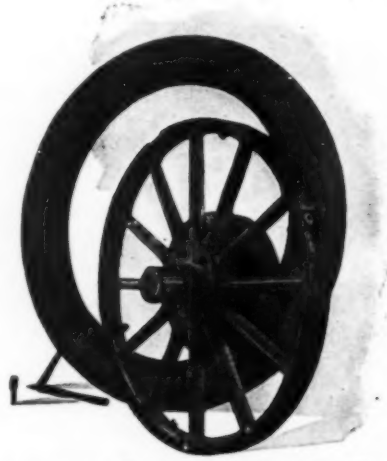
THE annual reunion of the men who formerly composed the staff of the American Dunlop Tire Co. occurred this year at the Hotel Astor, in New York, on January 17, which was during the automobile show week. The Dunlop company in time became merged with the Rubber Goods Manufacturing Co., and the former staff became considerably scattered. Among those present were Kirk Brown, now general manager of the Yale and Towne Manufacturing Co.; Alexander O. Holroyd, superintendent of the Dunlop tire department of the Hartford Rubber Works Co.; A. E. Osterlob, Chicago manager of the Goodyear Rubber Co.; William Perratt, Detroit manager of the Diamond Rubber Co.; Robert La Porte, Pennsylvania representative of the Hartford Rubber Works Co.; William Fetler, Philadelphia representative of the Goodyear Rubber Co.; and W. Heath Kirkpatrick, sales manager of the Peerless Motor Car Co.

AMERICAN TIRE NOTES.

THE Harburg Tire Co. (New York) are making the very strong claim that their rubber absolutely cannot separate from the canvas and they stand ready to prove it—at least in very many cases. These tires are made by the great Harburg-Wien company, with factories at Harburg, Germany, and Vienna, Austria.

The Fisk Rubber Co. (Chicopee Falls, Massachusetts) make a good point in describing their tire—that the air cushion is entirely above the rim, which makes materially for comfort.

An automatic tire inflator that fills any tire in two minutes' time is Maxfields's, marketed by Brown Brothers, Limited (London). It can be fixed to any car and consists of only two parts, an air compressor and an air chamber, the compressor being driven by friction from the flywheel or clutch of the motor.



PENNSYLVANIA RUBBER CO.'S REMOVABLE RIM.

Francis R. Sherwood, M. D., of Chicago, writes that he has run, on an 1800 pound runabout, 30,000 miles on Swinehart tires. He claims that his machine is in good order and so is he.

Motz, of Akron, is out with a new cushion tire for which he claims much greater resiliency, increased traction, a decrease in liability of skidding, and practically a better tire for sandy roads than anything yet marketed.

Aster & Co. (New York), who handle the "L'Electric" clincher tire, of French make, have a nonskid tread known as the Adams, in which the rivets, when the tire is not in use, are flush with the base of the tread. The tread itself, however, is of specially soft vulcanized rubber, which crowds out of the way, allows the studs to grip the roads, and thus prevents slipping.

A new tire protector has been brought out by the Standard Tire Protector Co. (Peoria, Illinois).

A point that the Firestone Tire and Rubber Co. (Akron, Ohio) make about their "Dual" tires is that, in case accidents happen to them, it very rarely happens that both tires are affected, and, therefore, results are never likely to be serious.

The Goodyear Tire and Rubber Co. (Akron, Ohio) are pushing their "Wing" tires in the carriage trade very successfully. It will be remembered that the "Wing" keeps water, sand, and grit from working between the channel and the tire, and all the wear, therefore, comes upon the tread.

The Swinehart Clincher Tire and Rubber Co. (Akron, Ohio) are out with a new motor truck tire of the twin form, molded in one piece, held by clincher fastenings, and by a quarter inch steel cable encircling the portion between the two sections.

The Michelin Products Selling Co., Inc. (New York), have been furnishing with marked success an extra heavy nonskid tire with Samson covering for fall and winter use.

The B. F. Goodrich Co. (Akron, Ohio) are now regularly equipping with their 1907 tires cars manufactured by the White Sewing Machine Co., the E. R. Thomas Motor Co., the Winton Motor Carriage Co., the E. R. Thomas Detroit Co., the George N. Pierce Co., the Cleveland Motor Co., the Dayton Motor Car Co., the Primier Motor Manufacturing Co., the Stanley Motor Car Co., and the Moon Motor Car Co., and are not only running their tire department night and day, but are rapidly pushing to completion a huge building for the manufacture of auto tires.

Many people with the best intentions are dating their letters January or February, 1906, when they mean 1907. No doubt the same people are writing Morgan & Wright, Chicago, when they should say Detroit.

In bicycle tires the Diamond Rubber Co. (Akron, Ohio) are still pushing the "Diamond Hunter," but with a special raised tread for this year's trade.

The Harburg Tire Co. (New York) are having great success with their new detachable rim, which can be taken off the wheel in less than one minute by the use of a very simple tool.

A new steam vulcanizer for tires and tubes has just been brought out by the John Wishhart Machine Works, Chicago. The vulcanizer is capable of repairing the smallest puncture or re-vulcanizing an entire tube.

An exceedingly effective and simple tool for removing clincher tires and suitable for all sizes, has been brought out by the Shawver Co., of Springfield, Ohio.

EUROPEAN TIRE NOTES.

THE Continental Tire and Rubber Co. of Great Britain, the English branch of the Continental Caoutchouc and Gutta-Percha Co. (Hannover, Germany), are guaranteeing their solid tires for 10,000 miles.

The Gaulois Tire Co.—"Gaulois" being French—have adopted and are pushing "Agrippa" nonskids on their tires.

Andre Michelin of Clermont-Ferrand, France, has just been testing the use of antiskids on one rear wheel and on both, and has proved beyond cavil that two antiskids are necessary.

The Hannover Gummi-Kaam Co. (Hannover-Limner, Germany) are building one type of their solids known as "Excelsior" with a tread so much like the Bailey "Won't-Slip" that it looks as if they were paying the inventor of that excellent device a very high compliment.

The Sirdar Rubber Co., Limited (London), advertise that their tires are "free from notches, which weaken the rubber." At the same time the notched tires are still in the ring.

The twin tires on the motor 'buses in London still seem to skid. An ingenious device to overcome this has been brought out by Reid & Rickie, Scotch mechanical engineers, which consists of an extra pair of wheels rigidly fixed to the solid rear axle. When the steering wheels turn either way these wheels lock in such a manner as to prevent skidding—at least so it is said.

The English Dunlop company have a steel studded nonskid racing tire that, after severe tests, has now been put on the market. Americans will remember that metal studded tires are very apt to go to pieces in a race when the cars are rounding curves at high speed. The steel studs that are in the Dunlop tire are not only imbedded in the tire itself but are securely held by countersunk washers placed behind a specially toughened fabric.

The United Omnibus Co. (Brighton, England) are prepared to swear that tire No. 396 on the rear hind wheel of bus No. 477 shows a mileage of 16,890.55 miles. It was a Peter Union solid tire.

The Automobile Club of London are about to inaugurate extensive trials of nonskidding devices for motor 'buses. The information thus derived will undoubtedly be of the greatest value.

A new tire for heavy work is the "Hartridge," which is made of five or more tires grouped together, with flat treads, held firmly by side flanges and showing an obstacle to side slip which is really very remarkable.

An English tire house, and handler of Goodrich solid tires are quoting in their advertisements a letter from one of their customers who returned a set of tires to be "refixed" after having been run 80,000 miles. They are seven years old.

"Elastes," a new tire filler, is said to be made of gelatine, glycerine, and chromic acid, but mixed very differently from the manner in which that well known compound had been put together in the past.

David Moseley & Sons, Limited (Manchester) offer as their leader in the 1907 trade, Moseley's "Perfect Detachable" tire. Instead of being beaded, the edges of the tire cover are made inextensible by having embedded in them several strands of flexible but very strong piano wire. "Yet," says their announcement, "pending the disappearance of the beaded edge type, we shall continue to supply it."

SOME WANTS OF THE TRADE.

[374] REQUEST has been made for the addresses of parties supplying "Petrolatum," a compounding ingredient described recently in this journal.

[375] The name of the manufacturer of "Electric" rubber hose, in 500-foot lengths; also the names of those manufacturing gutta-percha tissue.

[376] A European manufacturer wishes the address of an American concern furnishing either steel or hard rubber type shuttles for typewriters, similar to those on Hammond machines.

[377] Information is asked regarding firms manufacturing steel lugs that are inserted into single tube cycle tires. One part of the lug is vulcanized in the tire and the other part is a screw that screws into the lug.

[378] Addresses are wanted of manufacturers who furnish cloths, surfaced, calendered and frictioned; also the names of manufacturers of ducks, cottons, sheetings and muslins.

[380] Some information is desired regarding the sources from which Pelambang, sometimes called No. 5 Borneo, comes—if from other places than Singapore.

[381] A correspondent writes for information concerning a machine made in Germany for cutting beer bottle washers, which will cut three tubes at a time, the tubes being fed in 50 or 100 foot lengths, so that the operation of the machine is practically continuous.

[382] A request is made for names of manufacturers producing carpet sweeper wheel and protector bands.

[383] We have had an inquiry as to who manufactures the Carnation brand of rubber bands. Can any of our readers give the desired information?

[384] We desire to correspond with the manufacturers of tapping tools adapted to use in connection with the *Castilloa elastica* in Mexico.

GROWTH OF THE COTTON INTEREST.

THE cotton goods industry in the United States, by all accounts, was never before so prosperous as at this time. The year 1906 showed a large increase in the number of mills, besides extensions of many old mills. The total number of new spindles is estimated at between 1,500,000 and 1,750,000. The growth of the cotton goods industry in the United States for a quarter of a century past is indicated by the following figures from the census reports:

Year.	Capital invested.	Value of products.
In 1880	$219,504,794	$210,950,383
In 1890	354,020,843	267,981,724
In 1900	467,240,157	339,200,320
In 1905	613,110,655	450,467,704

The exports of American raw cotton continue to increase, as shown by the following treasury department figures for three fiscal years:

Year.	Bales exported.	Value.
In 1903-04	6,009,194	$370,811,246
In 1904-05	8,337,964	379,965,014
In 1905-06	7,050,856	401,005,911

The exports of manufactures of cotton amounted in value as follows: $22,403,713 in 1903-04, $49,666,080 in 1904-05, and $52,944,033 in 1905-06.

* * *

COTTON manufacturing under the factory system originated in Lancashire, England, which district to-day occupies in the cotton spinning and manufacturing trade of the world relatively the same position as is held by the "cotton belt" of the United States in the production of the raw material. This gigantic industry is concentrated within an extreme radius of thirty miles of the city of Manchester. Notwithstanding the growth of the cotton industry in other parts of the world, and in spite of opposition, the Lancashire district seems determined to retain its position of leadership. At the beginning of 1906 there were working in the district 48,322,684 cotton spindles, of which 2,430,367 had been put in during twelve months, and there were under construction or projected 90 new spinning mills, intended to contain 8,026,356 spindles. It is predicted that by the end of the current year England will have close to 60,000,000 spindles. Every branch of the British cotton trade has been very profitable of late, and this has led to unprecedented activity in cotton mill building. The advantages of specialization are apparent in the English cotton industry, in the economical production of goods to a degree not excelled perhaps in any other industry. The British home market is an important one, but her exports of manufactured cottons are enormous. For instance, £10,197,222 to China and Hongkong in 1905, over £21,000,000 to India, and £2,000,000 or more each to the United States, Turkey, Egypt, Dutch East Indies, and Argentina. The total imports of all kinds of cotton piece goods from Great Britain for three calendar years footed up:

	1903.	1904.	1905.
Square yards	5,157,310,600	5,591,819,700	6,198,199,900
Value	£55,267,273	£64,078,237	£70,817,032

* * *

THERE were manufactured in the cotton mills of India in 1905-06 about 562,900,000 yards of goods of all kinds, and the production of hand looms in the homes of natives is estimated to be more than double this amount. There were imported 1,297,612,999 yards of cotton cloth of all kinds.

* * *

THE cotton goods industry in Japan, while not large as compared with that of some other countries, is very profitable and is constantly growing. During the war with Russia the larger part of the cotton goods required for the army was made by native mills, and this gave an impetus to the industry the effect of which is shown in its continued growth. During the first half of 1906 the cotton mills of Japan used 209,574,662 pounds of raw cotton, of which the greater quantity was supplied by India, and the remainder by China and the United States in the order named. The number of spindles in operation was lately reported at 1,371,730. There are 49 companies manufacturing cotton goods, and this is the most important single industry in the empire.

* * *

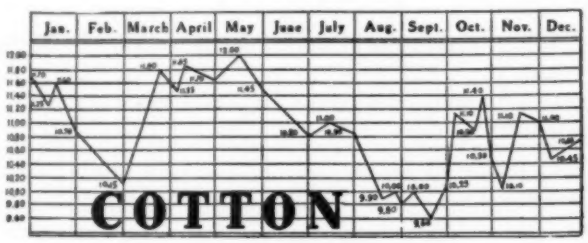
TEXTILE goods, mainly cotton, form the most valuable item in the import trade of South and Central America taken as a whole, with the exception of manufactures of iron and steel. The chief imports of cottons generally are of English and German origin, the former showing a marked tendency to decrease in recent years. The opinion is generally prevalent among South American importers that the United States is not getting as large a share of this trade as the excellence of American goods would warrant, owing to the lack of efforts of our manufacturers to cultivate this trade.

* * *

THE London *Financial Times* publishes the following statement: It is officially stated in Alexandria that the Egyptian cotton crop is likely to be much larger than last year, the estimates being 6,500,000 to 6,750,000 cantars (cantar, 124.7 pounds). The growth last season was a little below 6,000,000 cantars. The American crop is not unlikely to be not far off the record output of last year—namely, 13,250,000 bales. Then East Indian cotton will be in larger supply, and the crops in South America are likely to be greater than in 1905-6.

* * *

The chart herewith illustrating the range of cotton prices during the year 1906 is reproduced from the New York *Times*, through the courtesy of its editor:



WATERPROOFING PROCESSES.

WHILE excellent results have been attained in the waterproofing of silk fabrics, a certain difficulty has been experienced in rendering the goods actually water repellant. In other words, while the fabric may be made impervious to water, an inconvenient amount of water too often adheres to the outer surface in case a waterproof silk garment is exposed to the rain. A patented process for overcoming this condition is controlled and operated by the Silk Textile Waterproofing Co., Inc., Nos. 153-155 Lafayette street, New York. The company not only waterproof silks, and velvets as well, but they also treat by their process a large quantity of fabrics already proofed in the ordinary manner, and sent them by the trade for a finishing treatment. The registered trade mark of the company referred to consists of the word "Freeospot."

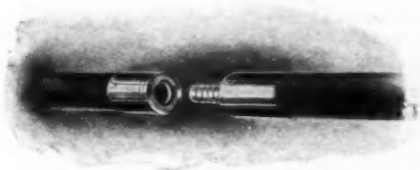
* * *

A METHOD or process of treating fabrics to render them waterproof, patented by Waldo Spaulding, of East Pepperell, Massachusetts, consists in first forming a solution of 10 parts casein, 80 parts water, and 6.4 parts borax by weight. The fabric is saturated with this emulsion, then subjected to the action of formaldehyde, and dried. The fabric is next hydrated, and then finally dried.

New Goods and Specialties in Rubber.

KLINGTITE QUICK HOSE COUPLER.

THIS device for quickly coupling hose requires no tools, washers, clamps, bands, or wires, both male and female ends being attached to the hose. To insure an easy and positive connection one end may be quickly slid over the other. Besides the ease with which it can be adjusted, a principal feature in its favor is that leakage is impossible. This is accounted for by the fact that all the joints become tighter as the pressure increases. In connection with compressed air and vacuum lines, and also wherever it is necessary to make and break a line frequently, this style of coupling is distinctly advantageous. In addition to the distinguishing features of this coupling already referred to, means is provided to prevent uncoupling of hose by any external lateral strain greater than the internal pressure, and means are also provided for attachment to standard hose bibbs and standard nozzles. [James Manufacturing Co., Denver, Colorado.]

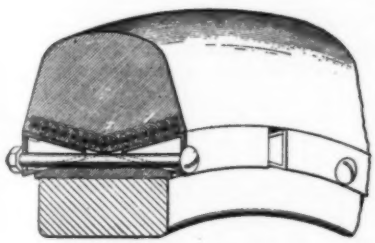


Patent applied for.

QUICK HOSE COUPLER.

MIDGLEY'S NEW TIRE.

A VEHICLE wheel tire of rubber, invented and patented by Thomas Midgley, is illustrated here. The wheel presents an inclined surface on its periphery. The resilient tire has imbedded in its base a plurality of interlaced helical coils of wire and an inextensible circumferential wire. A cut wedging ring is disposed between the inclined outer surface of the periphery of the wheel and the base of the tire, and means is provided for forcing the wedging ring home to secure the tire in position on the wheel. Or the wheel may be so made as to present two oppositely inclined surfaces on the rim, and the tire with slightly divergent surfaces, a pair of overlapping wedging rings being employed, as shown in the cut.



MIDGLEY'S PATENT TIRE.

CUSHION HEEL SEAT.

THE Cushion Heel Seat differs materially from many of the improvements that have made pedestrians doff their caps to clever inventors who have made walking so much more a pleasure and robbed the walker of that tired feeling that so often overtook him at the end of a day, sometimes, even when distances covered were not long. When one fertile brain projects a new method of making locomotion (or anything else for that matter) easy, it is only the beginning of the end for such a succession of improvements follows the original that it makes one wonder what and which to choose. It is certainly this way with cushion heels, many of which are good. The particular one in question has a pocket made for it during the process of shoe construction, so as not to destroy any of the measurements, as is apt to be the case when cushions are placed inside the shoe. That the nails are clinched in the cushion between the foot and the surface, thus making it impossible for any nail or tack to work up and come in contact with the foot, gives another reason for its popularity. This assured smoothness adds a decided measure of comfort, and leaves little ground for doubt as to the pleasure that such a heel cushion must bring. This is especially true when it is considered that the Future Shoe, to which these improvements belong, is built on up to date lasts and from the best materials. [Bemis & Wright, Lynn, Massachusetts.]

CUSHION HEEL SEAT.

THE "SPRINGFIELD" AUTOMOBILE LIFT.

IT is conceded by automobile owners and manufacturers that in order to get the best results and the longest term of service from tires they should be rested when not in use. The weight of the car is thus removed and at the same time the cars are kept from the oily floors. Many who appreciated the advantage to be derived from the care bestowed upon their tires are unable to do as they would on account of limited space. This difficulty has been overcome in the "Springfield" Lift, which can be used under any car and can be arranged in an incredibly short time. The lifting mechanism is that of a powerful four-pitch, square thread screw, chased on ⅞-inch cold drawn steel. These stand in pairs, one at each side of the car, and the two screws composing a pair are geared together by malleable iron skew gears and crank shaft. While these screws are joined together in pairs, they are entirely independent of each other and one pair of the other pair. That is to say, one wheel of the car can be raised while the others remain on the floor, or the four wheels can be made to rise at exactly the same time. When the screws are run to their extreme height of 7 inches it gives sufficient room for making repairs from under the cars. [The Shawver Co., Springfield, Ohio.]

AUTOMOBILE LIFT.

MEDICATED RUBBER GARMENTS.

HIPPOCRATES, the father of medicine, said, more than 2000 years ago: "Corpulence is not only a disease itself, but is also the harbinger of others." With this thought in mind Dr. Jeanne Walter has invented and patented Medicated Rubber Undergarments for the reduction of superfluous flesh. These garments are made of pure india-rubber, medicated according to a private formula of Dr. Walter's. They produce the desired results by stimulating the circulation, opening the millions of pores of the skin, and so encourage elimination of the waste products of the body by the natural channels, without effort and without the denial of the good things of life. Injurious after effects are said, too, to be unknown. Rather than being an impediment to action, the garments when worn increase the pleasures and benefits of exercise. This, of course, is due to the fact that the system is relieved of the burden of unhealthy fat and restored circulation takes place. When these new conditions have been taken on the skin becomes firm and the complexion clear. Garments for the reduction of superfluous flesh for different parts of the body may be procured, including corset belt, corsage, Eton jacket, hip belt, jacket and pants. The illustrations show a long jacket, rubber garments for men, and a head band. The jacket, while its primary purpose is not forgotten, is a remedial agent in reducing a too high temperature and encouraging the elimination of poisonous matter from the system in case of pneumonia, asthma, or other congestive conditions of the lungs. The garments for men illustrate the belt for reducing corpulence, the knee bandages and ankle bandages. The support which these bandages give afford a relief for rheumatic affections and stiffness of the limbs otherwise induced. The head band and chin strap is a specific for the unwelcome double chin. This is to be worn at night and is used for its medicinal properties as well as for restoring the lines of the face. The band across the forehead removes wrinkles and relieves headache. [Dr. Jeanne Walter, No. 55 West Thirty-third street, New York.]

HEAD BAND.

LONG JACKET.

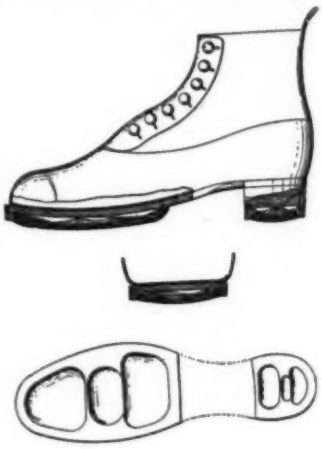
GARMENT FOR MEN.

RUBBER CEMENT OR PASTE.

GELATINE, glycerine, white gum, and rubber constitute the body of a paste and cement whose adhesive properties are indisputable. It is made in flat cakes of convenient form and size, and requires no melting, simply having to be moistened as it is used. For china which is not to be subjected to constant applications of hot water, is it said to give excellent results when used for repairing, and for mending torn papers, a seam so neat may be made that it almost defies detection. While this is used by many as a substitute for paste, mucilage, glue, etc., its chief claim to merit is the absolute neatness and security with which a torn leaf may be mended without the use of an underlay. [Lawrence & Thomas, Columbus, Ohio.]

A NON-SLIPPING CUSHION TREAD.

THE detachable head for boots and shoes patented by Nahum J. Busby, of Boston, is designed to present an anti-slipping surface that will be yielding when in use, the yielding and resilient use being produced by other means than the resilient quality inherent in the material. The sole consists of an inclosing outer rim or wall of solid rubber, adapted to receive stiches or nails for attaching it to the sole. Located within and filling the space within this rim or wall is a tread surface, formed of a mixture of flexible rubber or cement and a gritty substance, the same being oval or cup shaped, to provide a projecting tread surface and to leave an intervening space between it and the shoe sole. Located in this space centrally and transversely of the sole is a bridge, formed of clear rubber and cemented or otherwise attached to the inner surface of the tread portion. The bridge is formed with two transverse raised portions, forming an intervening saucer shaped space, and has a broad area of contact with the tread that gradually merges into narrow lines of contact with the shoe sole. In respect to a heel tread, the construction is substantially the same. In use the anti-slipping treads receive the whole wear, the bridges forming not only a reinforce for the treads, but also acting to additionally cushion the tread.



NON-SLIPPING SHOE TREAD.

CLOTH LINED RUBBER GOODS.

THERE is a demand now for the cloth lined water bottle, syringe, and combination that ensures a future popularity of which the present demand is but the beginning. The "Wearever" is one of the makes that is much in favor, it being light, strong, and durable, a trio of qualities early looked for in the purchase of a water bottle. The Wearevers are made with smooth or ribbed surface and come in maroon, non-blooming and white. The fountain syringes have tubing to match and come with soft finish, while the combination water bottle and syringe have the rapid flow attachment, also to match. These goods bear the guarantee of The Faultless Rubber Co., by whom they are manufactured at Ashland, Ohio.

SWEDISH MASSAGE AND BATH BELT.

AN aid to health and beauty is said to be the Swedish Massage and Bath Belt. It is made of rubber sponge, and running through it is red rubber belting extending beyond the ends of the belt, and to its ends are attached black hard rubber rings. These are of a convenient size for holding while applying the belt for friction creating purposes, in which lies the secret of the claims that are made for it, for use either in connection with the bath or in the massage movements. It is convenient in size, easy to manipulate, and has the advantage of bringing both hands and arms into action, thereby adding to the artificial means of gaining health and beauty by exercise. [The Hanover Rubber Co., Hanover-Limmer, Germany. George Borgfeldt & Co., sole agents for the United States and Canada.]

MASSAGE AND BATH BELT.

Recent Patents Relating to Rubber.

UNITED STATES OF AMERICA.

ISSUED DECEMBER 4, 1906.

No. 837,326. Vehicle wheel. [Involves a solid rubber tire, beneath which is a pneumatic cushion.] W. J. Mitchell and J. R. Mitchell, assignors to The Mitchell Punctureless Pneumatic Tire Co., all of Lynn, Mass.

837,373. Device for holding children in bed. D. C. Akers, assignor of one-half to George J. Moriarty, both of Woodstock, Ill.

837,399. Waistband [with rubber bands]. R. L. Gooding, Bridgetown, Barbados.

837,455. Cushioned butt plate [for guns]. A. T. Duncan, Clinton, Mo.

837,458. Pneumatic tire [with two inflatable tubes, one within the other]. H. C. Fairchild, Passaic, N. J.

837,459. Vaginal irrigator. C. O. Farrington and T. Watson, Sealy, Tex.

837,538. Hose coupling. John H. Biery and J. H. Zwanger, Allison, Nebr.

837,578. Suspenders. C. Ludolph, assignor to C. K. Hagedorn, both of Berlin, Ontario.

837,709. Vehicle tire. [Provided with a metal tire, having an elastic tire beneath.] J. J. McIntyre, Hartford, Conn.

837,749. Insulator. L. Steinberger, New York city.

837,759. Rubber sponge. [Provided with a cavity adapted to receive a cake of soap, a passage leading from the cavity to the outer surface of the sponge, and a fastening device within the cavity for securing the walls together.] G. M. G. Weston, Newton, Mass.

837,772. Safety valve for pneumatic tires. W. S. Arnold, San Francisco.

Trade Mark.

19,953. Rubber and minor plastics not otherwise classified. Hood Rubber Co., Boston. Crossed arrows. For marking rubber boots and shoes.

ISSUES DECEMBER 11, 1906.

837,924. Combined clothes washer and wringer. [Provided with rubber facings for the presser bed and presser plate, instead of elastic rollers.] O. Guitar, Columbia, Mo.

837,972. Horseshoe calk. T. W. Simmons, Martinsville, Ohio.

837,993. Surgical instrument. T. W. Williams, Milwaukee, Wis.

838,030. Vehicle wheel [with pneumatic cushion tire]. E. Keyser, Poughkeepsie, N. Y.

838,103. Car and air brake hose coupling. W. W. Gordon, Washington, D. C.

838,166. Folding wringer. H. G. Burrows, assignor of one-half to W. H. Douglas, both of Fall River, Mass.

838,202. Machine for winding the [rubber thread or tape] cores of golf balls. M. McDaid, Edinburgh, Scotland.

838,207. Hose rack. C. Nuhring, Cincinnati.

838,208. Adjustable hose rack. *Same.*

838,219. Nipple connection and valve opener [for tire valves]. W. S. Stanley, assignor to The Bridgeport Brass Co., both of Bridgeport, Conn.

838,236. Milking machine. L. Burrell, assignor to D. H. Burrell & Co., both of Little Falls, N. Y.

838,247. Safety tread. T. P. Farmer, Southwest Harbor, Me., assignor to Protective Tread Co., Boston.

838,284. Golf club [having head provided with a resilient mass of rubber and feathers. C. T. Thompson, Philadelphia, and F. P. Mitchell, Laurel Springs, N. J.

838,334. Colotomy truss. E. E. Hyatt, Birkenshaw, England.

838,419. Treatment and utilization of waste vulcanized rubber and ebonite. [Consists in pulverizing the material to be treated, adding a stiffening material, such as particles of mica or asbestos fibres, which have been previously treated with a binding material, and subjecting the mass to high pressure at a high temperature.] V. de Karavodine, assignor to B. Roux, both of Paris, France.

838,434. Respirator. J. Morgan, Randfontein, Transvaal.

Trade Marks.

6,083. The Safety Insulated Wire and Cable Co., New York city. A circle having the words *Seamless Waterproof* written around it on the inside and in the middle of the circle the word *Saffron*. For insulated electric wire and cable.

6,084. The Safety Insulated Wire and Cable Co., New York city. A circle having the words *Seamless Rubber Insulations* around it, and the word *Safety* inside. For insulated electric wire and cable.

ISSUED DECEMBER 18, 1906.

838,708. Garter. Robert Gorton, Newton, Mass.

838,751. Overshoe. A. E. Roberts, Norwalk, Ohio.

838,756. Apparatus for reclaiming waste rubber. [Particularly for removing sand, metal, and other foreign substances from waste rubber.] E. R. Solliday, Trenton, N. J.

838,824. Tire. [In a cushion tire, the combination with a single seamless supporting tube composed of oppositely coiled interwoven strands, said strands comprising a plurality of resilient wires, and said tube having portions telescoped to provide a plurality of thicknesses, of protecting collars surrounding the inner and outer ends of the tube, and a flexible casing covering the tube.] Addison Vandervoort, Belleville, Ontario.

838,838. Tire. [With self inflating pneumatic devices.] L. C. Backus, Smethport, Pa.

839,018. Vehicle wheel [with solid tire]. Thomas Midgley, Hartford, Conn.

Trade Marks.

780. The Stork Company, Boston, Mass. The picture of a stork, over the word *Stork*. For marking hats, caps, bonnets, bathing caps, waterproof head coverings of textile fabric, etc.

15,329. Mineralized Rubber Co., New York city. An anchor enclosed in a diamond shaped outline. For marking syringes and atomizers.

19,955. Hood Rubber Co., Boston. An arrow, for marking rubber boots and shoes.

20,938. Mercer Rubber Co., Trenton, N. J. The words *Red Breast*, for marking rubber belting, hose, and packing.

21,952. Whitely Exerciser Co., New York city. The word *Whitely*, for marking elastic cord exercising devices.

ISSUED DECEMBER 25, 1906.

839,098. Means for securing flexible tires to motor car and like wheel rims. Alfred Birchall, Liverpool, England.

839,213. Weather strip. F. J. Schwartz, Villa Grove, Ill.

839,214. Blanket for lithographic and other presses. T. C. Sherman, assignor to The Trinity Press Co., both of New York city.

839,260. Flexible connection. Andrew Benson, Chicago.

839,411. Weather strip. Frank Nunning, Jr., assignor to V. E. Tischi, both of Cincinnati.

839,432. Cushioned horseshoe. W. R. Smith, assignor of one-half to H. H. Hewitt, both of Buffalo, N. Y.

839,537. Holder for fountain pens. D. W. Beaumel, Brooklyn, N. Y.

839,544. Suspenders. B. L. Brandt, Detroit, Mich.

839,553. Combined yoke and hose supporter. A. H. Cohn, Larchmont, N. Y.

839,626. Device for inflating the pneumatic tires of vehicles. Carl Nielsen, Copenhagen, Denmark.

839,672. Swimming machine. John Stub, New York city.

Trade Marks.

22,886. Mercer Rubber Co., Trenton, N. J. The word *Redbreast*, to mark sheet rubber, rubber valves, and rubber jar rings.

23,200. William M. Poz, New York city. The word *Rubba-silk*, to mark rubber waterproofed fabrics in the piece.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENT SPECIFICATIONS PUBLISHED.

The number given is that assigned to the Patent at the filing of the Application, which in the case of those listed below was in 1905.

* *Denotes Patents for American Inventions.*

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, NOVEMBER 28, 1906.]

*16,016 (1905). Perfumed rubber. [Powdered perfumes are mixed with pure rubber and vulcanized, for making highly elastic sheeting for dams for dentistry and dress shields.] Traun Rubber Co., New York.

16,020 (1905). Hose supporters. A. E. Searle, Cleveland, Ohio.

*16,077 (1905). Rubber soled boots. [Layers consisting of rubber coated textile fabric, a middle sole of cotton duck treated with coating of raw rubber, between which are placed a metallic stiffening piece, preferably brass, and a layer of rubber, the edges being reinforced by rubber binding. An outsole of unvulcanized or partially vulcanized rubber, having preferably a thin top layer of raw rubber, is secured to the boot in a vulcanizing mold, the vulcanizing causing the various parts to adhere firmly.] G. F. Butterfield, Boston, Massachusetts.

16,089 (1905). Vehicle wheels. [To prevent punctures a series of wedge-shaped wood blocks are fitted between the outer cover and air tube. They are spaced by ridges under the tread of the cover by means of buffer pads.] J. W. Hornsby and D. Roberts, both of Grantham, Lincolnshire.

16,149 (1905). Vehicle wheels. [To prevent puncture, tire cover is made with recess formed by securing to it strips of steel or other suitable

material. The air tube is protected by a strip of canvas or rubber secured at its edges to the cover.] J. Chambet, Geneva.

*16,150 (1905). Fountain pens. W. I. Ferris, Stamford, Connecticut.

*16,167 (1905). Road sweeping machines. [Means provided to prevent dirt from clogging the bearings of the conveyor, and the pan to receive the sweepings from the brush is made flexible to avoid injury in consequence of the machine moving backwards. The plates of the pan extension are made of rubber.] C. K. Pevey, Worcester, Massachusetts.

16,286 (1905). Combined hose reel and sprinkler. J. Mellings, London.

16,401 (1905). Non-skid tire cover of leather. W. H. Ellam, Anerly, Surrey.

16,411 (1905). Heel protector. J. H. Hammond, London.

*16,501 (1905). Vehicle wheels. Pneumatic tire. A. M. Johnson and T. Ryan, Maysville, Kentucky.

16,508 (1905). Non-slipping stud for pneumatic tires. R. K. Evans, London.

16,528 (1905). Wheel rim. [A rim for facilitating the removal of tires has one or both side flanges hinged so as to be capable of being turned out of the plane of the wheel.] T. J. R. Clarkson, Aston Manor, Warwickshire.

(ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 5, 1906.)

*16,555 (1905). Corset [with elastic abdominal gores]. D. Kops, New York.

16,598 (1905). Heel protector. J. E. Davidson, Toronto, Canada.

16,601 (1905). Pneumatic tire. W. T. Rogers, Portsmouth.

*16,654 (1905). Means of attaching elastic tires to rims. R. Mulholland, Dunkirk, New York.

16,691 (1905). Rubber compositions. [Rubber is mixed with any kind of metal powder and sulphur, and vulcanized. The product is used for tires, stair treads, horse pads, horseshoes, heels, and spindles for looms, and for covering floors. The rubber is dissolved before mixing, in naphtha or other like fluid.] C. Marter, London.

16,722 (1905). Bust supporter. J. Bree, Charlottenburg, Germany.

16,795 (1905). Studs for armoring motor car tires. H. Bremer, Nehcim-on-the-Ruhr, Germany.

16,822 (1905). Pneumatic tire. [Protected by a segmental tread of hardened steel, the segments being secured by transverse bolts passing through the tire and side flanges.] J. H. Goodman, Blackwell.

*16,907 (1905). Hose pipe support. J. E. Malnburg, San Francisco, California.

*16,908 (1905). Pocket pencil holder. [Described in THE INDIA RUBBER WORLD, January 1, 1907—page 117.] W. H. Vance, Akron, Ohio.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 12, 1906.]

17,029 (1905). Vehicle wheel. [Buffer springs are mounted between the rim and a cushion of rubber, lateral play being prevented by plungers working in bushes against the action of springs.] W. Krische, Hanover, Germany.

*17,096 (1905). Eraser holder. F. W. Hayes, Detroit, Michigan.

17,132 (1905). Golf ball. [Formed with an inflated or solid elastic rubber core which is kept in position by internal unyielding projections of celluloid or other hard material extending upwards from the outer part.] J. A. L. Nixon, Dundee, Scotland.

17,132A (1905). Golf ball. *Same.*

17,170 (1905). Submarine vessels. [A rubber ball closed at the top by a cover is used as a float whereby communication is established between a submerged submarine vessel and the surface of the water. Tubes pass through and are secured to the cover, one being used for telephonic wires and the other as an air supply pipe.] F. A. Smith, Croyden, Surrey.

17,186 (1905). Golf ball. [Made by winding into shape a tape consisting of an amalgamation of rubber and fine fibrous material. The ball is coated with a solution of gutta-percha which may also be mixed with fibrous material, and the solvent is driven off by heat and the outer shell molded.] R. A. Morris, Stockton Heath, Warrington.

17,227 (1905). Springs. [The rubber blocks used for buffers on railway trains, drawbars, etc., are provided with spaces into which the substance of the rubber can flow under compression, thus avoiding excessive tipping of the drawbar and the abrading action of the metal disks.] C. H. Gray, Silvertown, Essex.

17,258 (1905). Cover for pneumatic tires. [A tire fabric made from threads consisting of light, flexible, metallic chains sheathed with cotton or other textile, proofed with rubber or covered with a wrapping of raw rubber.] C. M. Gautier, London.

17,298 (1905). Elastic tire. [India-rubber cords wound spirally in layers about a central core of hard rubber, the successive layers being wound in different directions. Projections on the core intersect the coils and prevent creeping of the elastic body which is enclosed in a cover crimped to engage the corresponding corrugated surface of the rim.] A. W. Carpenter, London.

17,336 (1905). Pneumatic tire. [A puncture preventing layer of cork is interposed between the outer cover and the air tube. The cork is cased with canvas and solutioned to the cover.] T. Hart, Cambridge.

*17,396 (1905). India rubber composition [for withstanding the action of high pressure steam, or for use as an acid proof or electric insulating material, consisting of a mixture of rubber, fibrous asbestos, sulphur, and litharge, to which are added pore filling materials, such as zinc, iron oxide, etc.]. F. M. Ekert, Ashland, Ohio.

17,452 (1905). Regenerated rubber. [Vulcanized rubbers are dissolved in resin oil obtained by the distillation of colophony; the mass is filtered and the rubber precipitated by means of a ketone.] J. Neilson, Linden, Germany.

[ABSTRACTED IN THE ILLUSTRATED OFFICIAL JOURNAL, DECEMBER 19, 1906.]

17,526 (1905). Pneumatic tire. [Made non-skidding by a leather backing in which wire staples are inserted.] G. and C. Sturgess, Mablethrope, Lincolnshire.

17,552 (1905). Heel protector. T. Spedding, Hartlepool.

17,626 (1905). Elastic tire. [A series of rubber blocks fitted in metal boxes, with or without supplementary metallic or other springs, are fitted in a channel rim and threaded on a chain which is adjustable circumferentially.] F. St. G. Caulfeild, Bourne End, Buckinghamshire.

17,629 (1905). Vacuum cleaner. A. G. Brooks, London.

*17,633 (1905). Horseshoe pad. W. A. Rupert, Mercer, Pennsylvania.

*17,679 (1905). Electric couplings. [For galvanic batteries in use where the vibration is great. Washers compressed by the binding screw when in use.] W. Mills, Elizabeth, New Jersey.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION).

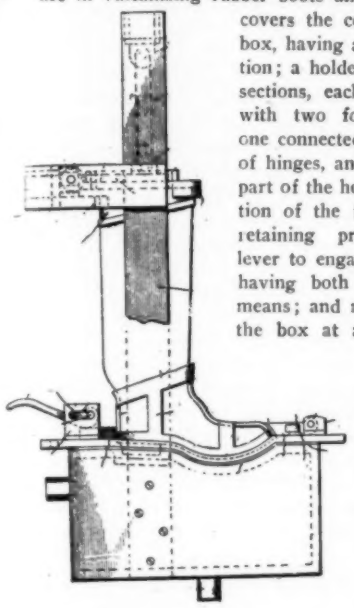
364,387 (Mar. 17, 1906). Genillon. Spring wheel.
364,420 (Mar. 20). P. Lamure. Spring wheel.
364,445 (Mar. 20). E. Giraud. Spring wheel
364,556 (Mar. 24). Facsen, Dentz & Schmann. Solid tire.
364,778 (Mar. 31). Nivet. Fabric weaving machine.
364,824 (Apr. 2). E. Teppet. Elastic tire.
364,928 (Apr. 5). C. Lincssier. Tire fabric.
364,922 (Apr. 5). B. C. Seaton. Elastic tire.
365,029 (Apr. 7). Cuinet et Panze. Skid tread.
365,114 (Mar. 5). Fleury. Puncture proof tire.
365,074 (Apr. 1b). Société Houry et Filleul-Brohy. Wire insulation.
365,047 (Apr. 8). P. Beresine. Rubber substitute.
365,023 (Apr. 7). E. Muller. Tire vulcanizer.
365,216 (Apr. 13). P. Boucher. Elastic tire.
365,347 (Apr. 17). Brandin. Detachable rim.
365,354 (Apr. 17). Staub & Co. Tire protector.
365,357 (Apr. 18). E. Massot. Elastic tire.
365,389 (Apr. 18). Société Michelin et Cie. Detachable rim.
365,416. (Apr. 19). Société Michelin et Cie. Scheme to prevent deflation of pneumatic tires.
365,418 (Apr. 19). E. Gaillard. Spring wheel.
365,373 (Mar. 20). Delatour fils. Soft rubber stop cock.
365,532 (Apr. 24). E. R. Soulas. Spring wheel.
365,487 (Apr. 23). A. Bourdes. Extracting rubber from plants.
365,561 (Apr. 24). H. Levy and T. Nathan. Rubber heel.
361,603 (July 3, 1905). A. E. Vincent. Method of collecting benzine vapors, given off during certain industrial processes.
365,730 (Apr. 28, 1906). E. B. Killen. Rubber tire.
365,941 (May 5). G. Chapelle. Tire protector.
365,952 (May 7). F. L. Rousseau. Tire protector.
365,972 (May 7). J. A. Swinehart. Solid rubber tire.
366,008 (May 8). J. Heibling. Elastic tire.
366,013 (May 8). H. F. Marie. Spring wheel.
365,899 (May 3). Miss E. Thuillard. Corset with rubber threads.
366,206 (Apr. 6). Talleyrand-Perigou de Sagan. Removable rim.
366,191 (Jan. 31). E. Luserna di Rora. Synthetic rubber.
366,240. (May 19). V. Labour. Composition for tire covers.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Counseil, 16 avenue de Villiers, Paris, at 50 cents each, postpaid.]

IN a report on the British East Africa Protectorate, the United States special agent, Mr. Raymond F. Crist, regards the prospects most favorable for the development of Uganda, now well provided with transportation facilities through the completion, by the government, of the Uganda railway, at a cost of $30,000,000. This railway reaches important sources of native rubber, and Mr. Crist finds that rubber is being planted to a considerable extent, the Ceará species (*Manihot Glaziovii*) being regarded with special favor.

VULCANIZING RUBBER BOOTS.

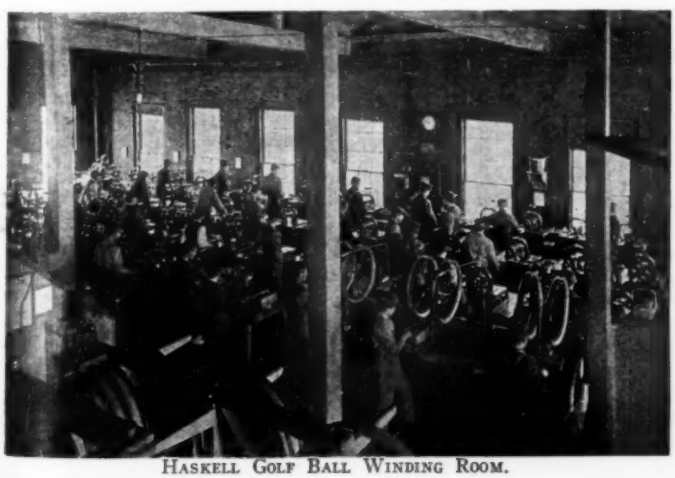
THE illustration relates to a recently invented apparatus for use in vulcanizing rubber boots and shoes. The invention covers the combination of a heating box, having a mold in its upper portion; a holder or frame composed of sections, each of which is provided with two forward projections, the one connected to the other by means of hinges, and the latter hinged to a part of the heating box; the rear portion of the frame or holder having retaining projections, a clamping lever to engage said projections, and having both sliding and pivotal means; and mechanism supported by the box at an elevation above the latter and provided with means for instituting a downward pressure on the last of the boot or shoe to be treated. The patentee is Jonathan R. Austin, of Mishawaka, Indiana.



A patent has been granted in the United States and it is understood that applications are pending in other countries.

A GOLF BALL WINDING ROOM.

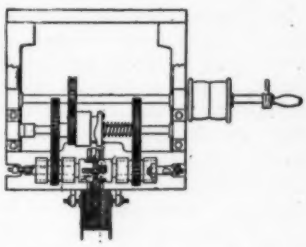
WHEN the Haskell golf ball—the first of the wound rubber core type—was first brought out, the winding had to be done by hand. The utmost accomplishment of an expert worker under such conditions was three balls per day. The prospect of a large demand for the new golf ball led to manufacturers to experiment with machinery for winding the cores, with the result that a machine was perfected capable of winding 700 feet of stretched rubber cord for a Haskell core in three minutes. An illustration on this page gives a view of the interior of the winding room in the golf ball department at the factory of The B. F. Goodrich Co. (Akron, Ohio). At the time of the taking of this view the capacity of this room was 18,000 golf balls in one day; the capacity has since been increased.



HASKELL GOLF BALL WINDING ROOM.

GOLF BALL WINDING MACHINE.

THE accompanying illustration relates to a machine for winding thread or tape of india-rubber for forming the cores of golf balls, invented by Martin McDaid, of Edinburgh, Scotland. The device involves mechanism which imparts to the core motion in three directions—(1) a rotary motion about a longitudinal axis, and also rotary motion (2) about axis at an angle to one another, and (3) to said longitudinal axis—as to wind the tape or thread evenly all round the core as it grows in size. The whole comprises, in combination with horizontally arranged rotating shafts, means for rotating the shafts, gripping rollers on the shafts for holding the core, and means for actuating the gripping rollers so that they may revolve the core in different directions while it is being rotated by the shafts. This invention is the subject of United State patent No. 838,202.



GOLF BALL MACHINE.

FOR CLEANING WASTE RUBBER.

A NEW apparatus for the removal of sand, metal, or other foreign substances from waste rubber, preliminary to a reclaiming process, is illustrated on this page. It comprises, in the first place, a trough for containing water, together with revolving members carrying blades or flights, working in proximity to the bottom of the trough, for the purpose of moving stock through the trough. These members are so arranged, in relation

SOLLIDAY'S WASTE RUBBER APPARATUS.

to each other, as to leave spaces between them, at the bottom of the trough, for the deposit of the sand, metal, etc., the blades of one member moving in the opposite direction to the blades of the other member adjacent to it. The stock is finally delivered from the trough by means of an endless flight conveyor. The inventor, to whom a United States patent has been granted, is Edward R. Solliday, of Trenton, New Jersey.

NO CLOTHES WRINGERS IN GREECE.—The United States consul at Athens, Mr. George Horton, reports that there is only one first class steam laundry in Greece, and that all other laundry work is done in very primitive fashion. He thinks that American wringers could be introduced there, if such a thing as a permanent exhibition of American goods existed at Athens.

MR. HERBERT WRIGHT, of the Ceylon Civil Service, and whose studies of the "Pará rubber" tree have been of distinct value to the planting interest, is spending a year on leave in England, after which, it is understood, he will join the agricultural department of India, at Calcutta.

A NEW feature in the American footwear trade this season is the demand for overshoes made to order. Many women are wearing shoes with rather long, pointed toes, and to get an exact fit overshoes are ordered to measure.

Trade Topics in The Dominion.

RUBBER CONSOLIDATION IN CANADA.

THE all absorbing topic in rubber circles at the present moment [says *The Canadian Shoe and Leather Journal*] is the amalgamation which has recently been consummated between the Canadian Rubber Co., the Granby Rubber Co. and the Maple Leaf Rubber Co., under the name of the Consolidated Rubber Co. There are diversities of opinion as to just what effect the consolidation will have upon the rubber interests of the country. A goodly number contend that it will be in the best interests of all concerned, having a steadying effect upon the trade which will redound most beneficially alike to manufacturer, dealer, and wearer. On the other hand, there are those who can see nothing but demoralization in what they regard as an attempt to corral the entire rubber trade of the country.

Then again, there are those who hint that the United States Rubber Trust is behind the whole transaction, and that they are manipulating things so as to gain control of the rubber interests of both Canada and the United States. It is said that the United States Rubber Co. now virtually control the rubber supply market and could very seriously menace the rubber shoe industry of Canada if they chose to curtail the supply of raw material. Most of these rumors are very vague and wild and without any apparent foundation.

The consolidation of the rubber interests is not a child of to-day; for some time past a few of the leaders in the industry have been working to that end, not because of increased dividends that were likely to accrue, but because they were convinced that the best interests of the trade and consumers would be conserved by such a union. It is well known that the greater the capacity of the plant the cheaper the goods can be turned out, so that the consumer ought to reap a benefit from consolidation by getting cheaper rubbers. Any attempt at a combine to "hold up" the consumer would no doubt soon be thwarted by the Government in the removal of the duty which now protects the industry.

The talk about the United States Trust controlling the rubber interests of Canada is just so much gossip. Under present tariff conditions the rubber manufacturers of Canada are receiving a fair return for their labor, and it is most unlikely that they would jeopardize their interests by entering into a compact with our neighbors to the South. With the constantly increasing trade, there is plenty of room in Canada for a number of large rubber manufacturing concerns, and no doubt the consolidation which has just taken place will prove to be in the best interests of the trade. With the astute men at its head, a future of unbounded prosperity is predicted for the Consolidated Rubber Co. as they are all men of large experience and exceptional business acumen.

It is also whispered that other companies have been approached with a view to uniting their interests, but that no definite arrangements have yet been arrived at, although it is said to be only a matter of time before the union takes place, as negotiations are well under way. There is also a rumor to the effect that one or two of the felt shoe companies are being negotiated with, and that there is a possibility, if not a strong probability, that there will be a combining of these two industries under the wing of the Consolidated.

So far no drastic changes have taken place in the management or policy of the various individual concerns, it being evidently the intention that each should for the present work upon its own lines. Doubtless important changes will be made before the opening of the new season involving not only economy in both production and administration, but greater effectiveness in handling the product of the various factories. The fact that the American companies will not issue their lists for a month or so is giving the Canadian trade a little more breathing time, as they seem to follow closely American precedents as to selling policy.

DISPOSAL OF SECONDS AND OBSOLETE GOODS.

THE rubber shoe manufacturers of Canada held a conference recently in regard to the disposal of seconds and obsolete goods. After several plans had been discussed, it was agreed to handle this business through the Commercial Rubber Co., Limited. This company will receive not later than January 10 in each year lists of unsalable lines, and promptly catalogue them. The sales will be by tender, but no tender will be entertained at less than 40 per cent off gross list prices. All these goods will be "punched" before shipment. The sales agent of the company is W. S. Louson, at Notre Dame and Papineau streets, Montreal. The Commercial Rubber Co., Limited, was incorporated early in 1905, with $20,000 capital, to engage in the rubber footwear trade. Its directors included the presidents of four leading rubber manufacturing companies, and its organization gave rise to rumors that a consolidation of the companies was intended. The Commercial company in April, 1905, bought the plant of the Boston Rubber Co. of Montreal, Limited (in liquidation), when it developed that the purpose of the company was to keep this factory out of the field of competition.

G & J TIRE PATENTS IN CANADA.

MENTION was made in the last INDIA RUBBER WORLD [page 125] to the recent expiry of a Canadian tire patent granted to Thomas B. Jeffrey. There are other patents, of later date, however, that have a bearing upon the "G & J" tires. One, in particular, issued to Mr. Jeffrey in the United States on April 28, 1896 (No. 558,956), is regarded as covering an essential feature in the clincher tires as now made, and has always figured in the suits for infringement brought by the G & J company. This patent is also in effect in Canada.

BRIEF MENTION.

THE Gutta-Percha and Rubber Manufacturing Co. of Toronto, Limited, issue this notice: "To answer innumerable inquiries, we wish to state that this company is not in any way, shape, or manner, a part of, or connected with any rubber merger or trust."

The Merchants' Rubber Co., Limited (Berlin, Ontario), have opened a branch warehouse at Brantford, in charge of F. Bauslaugh & Co. This is the sixth depot, in different parts of the Dominion, for the sale of their rubber footwear, besides which the company are represented by the wholesale firm of Thomas Ryan & Co., Limited, at Winnipeg and Calgary.

The Canadian rubber footwear manufacturers report that their northwestern trade is constantly on the increase. The volume of this trade during the opening months of this season greatly exceeded that for the same period last season.

THE WELL-KNOWN DUNLOP TRADE MARK.

THERE was returned from the dead letter office, one day last week, a small, flat piece of electrotype metal, a half inch square, which had evidently been picked up in the New York city postoffice, and sent to its rightful owners in Toronto by some one who had a knowledge of trade marks in Canada. The piece of metal was the Dunlop two hands. It had been sent by the Dunlop company, enclosed in a letter, to THE INDIA RUBBER WORLD. The metal cut through the envelope, and was most likely picked up on the floor of the New York city postoffice. Some one there slipped it into a dead letter office envelope and sent it back to Ottawa, from whence it was returned to the Dunlop company as a matter of course. The incident reflects much credit on the postoffice.—*Toronto Star.*

THE RUBBER TRADE IN SAN FRANCISCO.

BY A RESIDENT CORRESPONDENT.

ALIVE business in rubber footwear has resulted from the very bad condition of the streets in the burned district. There are so few sidewalks that it is for all intents and purposes a case of walking in the street all of the time, and the mud which has gathered there will never have time to dry until the winter and spring rains are over. It is impracticable to try to get about many of these streets without rubber boots or shoes, and the local houses dealing in this line have had all the trade they could handle.

The building activity of the city is progressing rapidly, and permanent buildings are springing up on every side, so that the burned district begins to look more and more like a habitable region. Everybody is anxious to get into a permanent building as the insurance rates are beyond all reason, and it is that consideration which will drive the retailers away from Van Ness avenue to the new and permanent buildings which are being erected for them downtown.

The new factory of the Bowers Rubber Co., at Black Diamond, is now in active operation. The company had secured a large acreage, had completed plans for a modern rubber factory, and had begun work on one of the main buildings, when the San Francisco fire occurred. Then the company bent all their energies to the completion of this building, but instead of waiting to com-

TEMPORARY FACTORY OF THE BOWERS RUBBER CO.

plete all their plans, temporary corrugated iron structures have been put up. They have been working two shifts, night and day, in the rush of cleaning up accumulated orders. Work will be begun soon on the additional permanent buildings. Mr. C. H. Chase, of the Bowers company, says that the indications are that the present year will result in the heaviest country business that they have ever enjoyed.

The Sterling Rubber Co., a new concern mentioned in the last INDIA RUBBER WORLD, have taken on the Pacific coast accounts of the Seamless Rubber Co., the Bourn Rubber Co., and the Voorhees Rubber Manufacturing Co. Mr. W. Perkins, the president, and Mr. W. M. Gibson, the manager, were connected formerly with the Gorham Rubber Co., and are well and favorably known to the trade here.

"It is simply a matter of getting goods; the business is here," said the manager of the Sterling Rubber Co. "Trade has been remarkably good, and there has been plenty of business for everybody. We can dispose of goods as fast as we get them, but the getting of them is a hard matter. The delay in shipments of frieght, which had only in a small way begun to be relieved before the holidays, has been almost completely choked up again, on account of the rush during the holidays, and now on account of the heavy storms, as well as a railroad strike, which has blockaded freight on the other side of the mountains. Freight cars with goods in them are backed up now in the yards by the thousands, and some of them it is impossible to get at, so that they stay there sometimes for a month or more. Then the independence of the working classes is a great problem to deal with. They are getting good wages and they deserve good wages, but the trouble is to keep anybody in any one line of employment. The building trades have drawn large numbers from all other industries, and the high wages there induce men to try that line so that they are changing continually. The cost of every commodity has advanced so that living comes at least a third higher now for everybody than formerly. Then buildings are still so scarce that you have to pay a mint of money for a place as big as a cigar box, and the matter of insurance has grown to be a nightmare with the majority of the merchants."

Mr. Joseph V. Selby, Pacific coast manager of the Boston Woven Hose and Rubber Co., states that in the mechanical rubber lines business in San Francisco, and for that matter, on the entire coast, was never better than it is at the present time. He reports for the Western Mechanical Rubber Goods Association, which was organized for the purpose of protecting the interests of the mechanical rubber industry on the coast, with headquarters in San Francisco, that since the earthquake and fire there have been no meetings. But as soon as the merchants are better settled, and the important matters of getting reestablished again have become less pressing, the members propose to resume their regular monthly meetings.

The Goodyear Rubber Co. are now doing business at the same location as before the fire last year—Nos. 573-579 Market street—and which they have occupied for 35 years. They are of course in a temporary building, but good progress has been made on the new permanent building which is rising on that site. Mr. R. H. Pease, president of the company, reports business as good as at the same time a year ago, which was before the fire. Business during December (in footwear) was particularly good, on account of the rains. He says that the great trouble in San Francisco is the lack of labor; that people ought to come out from the East. The company are greatly helped in carrying on their Pacific coast business by having at Portland, Oregon, a store filling a building of six stories and basement, with 100 feet front.

Mr. Parish, of the Oakland store of the Gorham company, was lately confined to his bed for two or three weeks on account of illness. He is now able to be around again.

Henry Martine, manager of the Gutta Percha and Rubber Manufacturing Co., whose headquarters are now at Alameda, California, sustained very serious injuries in an automobile accident about New Year's. Mrs. Martine was with him at the time and was even more seriously injured than he. He has been gradually recovering from his injuries and has been able to be out some.

F. W. Paige, representing the San Francisco branch of Morgan & Wright, which is located in a large establishment together with the Hartford Rubber Works Co. and the G & J Tire Co., at No. 423 Golden Gate avenue, reports that conditions are excellent, collections good, and the future prospects all for prosperity. Mr. Paige returned lately from an Eastern trip. C. A. Davis, the representative of the G & J Tire Co., will start East about February 1 to visit the factory, and prepare for the coming year's business.

The Harris Rubber and Supply Co. is a new concern just incorporated in San Francisco. They have fitted up a new store on the corner of Polk and Turk streets, and the principal business of the company at present is handling the Goodrich tires. Mr. Harris was formerly with the Goodyear Rubber Co.

The new Phoenix Rubber Co. have got their factory started. They are operating six presses, and expect shortly to have ten at work.

Recent visitors to the Pacific coast trade were Mr. Hayes, of the Home Rubber Co. (Trenton, N. J.), and Mr. Torrey, of the Pennsylvania Rubber Co. (Jeannette, Pa.)

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

AT the annual meeting of The B. F. Goodrich Co., on January 9, Colonel George T. Perkins retired from the office of president. He has been gradually giving up positions of business activity with a view to spending his declining years quietly. He still retains his interest in the Goodrich company, however, and will officiate as chairman of the board of directors. The officers of the company are: Bertram G. Work, president; F. H. Mason, first vice-president; H. E. Raymond, second vice-president; E. C. Shaw, general manager of works; C. B. Raymond, secretary; W. A. Folger, treasurer; W. A. Means, assistant treasurer; C. C. Goodrich, general superintendent, and H. E. Joy, assistant general superintendent. The directors are Messrs. Perkins, Mason, Work, Goodrich, Shaw and H. E. Raymond and George W. Crouse.

The past year was one of unrivalled prosperity with the company. Several extensive additions to the plant were made, and others are being planned. Within the last few weeks the Goodrich company have purchased nearly $50,000 worth of property adjoining their general offices, and will erect buildings this year which will double the office room.

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THE Aladdin Rubber Co. held their annual meeting during the month in their offices in the Hamilton building. The officers' annual reports showed the company to be in a prosperous condition, and the product sold six months ahead. It was said that this fact has made it necessary to turn down a number of large orders. Orders have been placed for machinery, which will double the capacity of the present plant at Barberton, and the officers of the company contemplate the erection of a new plant, much larger than the one used at present, in the near future. The old officers and directors were re-elected, as follows: James Christy, president; C. M. Gilbert, secretary, treasurer and manager. Directors: James Christy, Will Christy, C. M. Gilbert, J. H. Conner and C. S. Heller.

* * *

JAMES A. SWINEHART, senior member of the Swinehart Clincher Tire and Rubber Co., has returned from a European trip, and is much elated over the strides which the Swinehart tire has made in foreign countries. He closed a deal whereby all of his German patents are to be sold to a manufacturing concern in that country. H. F. Siegrist, treasurer of the Swinehart company, has resigned, and has been succeeded by Fred A. Boren, a local bank official. The company is installing a great deal of new machinery in its plant, and when all proposed improvements are completed its present output will be increased 50 per cent.

* * *

"ANDY" AUBLE, the Akron garage owner who, with W. W. Owen, of Cleveland (as chauffeur) and Fred Work, of Akron, drove an Oldsmobile from New York to Ormond Beach, Florida, in record time, is much gratified at the showing which he made. The party encountered roads which were almost impassable, and the name "Pathfinders," with which they were dubbed, fitted exactly, according to Auble. A peculiar feature about the trip is that while the machine was fitted with Diamond tires, it carried as a passenger Mr. Work, a brother of the newly elected president of The B. F. Goodrich Co., a rival concern in the tire manufacture.

* * *

THE Diamond Rubber Co. will erect another new building, 320 x 150 feet and five stories high. The structure will be used to increase the Diamond company's facilities for the manufacture of automobile tires. Mr. C. E. Mathewson, the Pacific coast manager of the Diamond Rubber Co., spent a week at the factory here when he came east to attend the New York automobile show. He reports that his company have equipped with their tires more than 6,000 of the 10,000 automobiles on the coast.

* * *

THE India Rubber Co. property, the site of a rubber factory burned in March, 1903, has been purchased by the George W. Carmichael Co., who probably will erect a furnace manufacturing plant there.

* * *

RICHARD MASON and Henry Hall, who have been employed by The B. F. Goodrich Co. for 26 years, were placed on the pension list January 1. The Goodrich company adopted this plan of retiring the most faithful of their employés two years ago.

THE RUBBER TRADE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

THE Prudential Rubber Co., a new Trenton concern, was incorporated in the office of the secretary of state on January 21. The charter states that the company is formed for the purpose of manufacturing and dealing in rubber goods of all descriptions. The capital stock is $125,000, divided into 1250 shares of the par value of $100. The incorporators are Charles F. McCoy, M. A. McCoy, E. Furman Hooper, and A. A. Hooper. Charles F. McCoy is the agent in charge, and the office at present will be in the Wilkinson building. Mr. E. Furman Hooper was tax receiver of Trenton for several years, and is head of the wholesale paint house of E. F. Hooper & Co. Mr. Hooper states that at present the new company will confine its business to the selling agency line, handling mechanical rubber goods. Later it may enter the manufacturing field.

* * *

MEMBERS of the office force of the United and Globe Rubber Manufacturing Cos. served a dinner on the evening of January 3, in the Dutch room of Margerum's restaurant, to celebrate the closing of another year's business. The banquet followed the annual stock taking. The tables were handsomely decorated and the event was a most pleasant one. Those present were: Alexander H. Clarke, Aubrey Love, Samuel Cadwallader, Frank H. Van Derbeck, Jesse M. Fabian, J. Oliver Thorp, Malcolm Salter, Townsend N. Conrad, Daniel M. Lovett, Thomas A. Maguire and J. Lewis Hendricks, Jr.

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THE Ajax-Grieb Rubber Co. have been granted another patent for a rubber heel and sole. The new invention is designed to meet a want long felt by wearers of rubber soled footwear, that is, the nonslipping quality. The new sole is composed of a black, tough rubber stock with a center of pure white rubber and ground cork. The cork element accomplishes the nonslipping result.

* * *

JOHN S. BROUGHTON, secretary, treasurer, and general manager of the United and Globe Rubber Manufacturing Cos., was chairman of the general committee which made a conspicuous success of the charity ball given in Masonic Temple, on the evening of January 10, for the benefit of Mercer Hospital. The ball was the leading social function of the present season. More than 700 tickets were sold and $1,200 were the net proceeds.

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WILLIAM J. B. STOKES, one of the proprietors of the Trenton, Joseph Stokes and Home Rubber companies, was re-elected treasurer of the city of Trenton by the common council, on January 1. After taking the oath of office, Treasurer Stokes named a new clerk, appointing Carl C. Kuhl, who was employed in the rubber department of the John A. Roebling's Sons Co. Mr. Kuhl resigned to take his place in the City Hall. The term of Mr. Stokes as treasurer is three years.

News of the American Rubber Trade.

ELECTRIC RUBBER MANUFACTURING CO.—ASSIGNMENT.

ON December 31 Frank P. McDermott, of Jersey City, was appointed receiver in New Jersey of the property of the Electric Rubber Manufacturing Co., Rutherford, N. J., with a bond of $25,000, on the application of Samuel P. Robinson, Samuel D. Sherwood and Charles Reynolds, shareholders in the company. The liabilities are reported at $45,312, and nominal liabilities at $159,374. The company was incorporated in New Jersey in November, 1903, with $1,000,000 capital authorized, and began operations in the latter part of 1905, making pneumatic and solid rubber tires. On January 3, Mr. McDermott was appointed auxiliary receiver for the property in New York state of the company above named, with a bond of $5,000. The company own a majority of the shares in the Electric Rubber Co. of New York, at No. 253 West Forty-seventh street, the selling agents for the New Jersey corporation. The New York concern was incorporated at Albany January 31, 1906, with $10,000 capital. The Electric company were supposed to be in good condition, in view of the active business in tires done by them recently. John J. Voorhees, of the rubber trade, was appointed co-receiver with Dr. McDermott on January 29, and the factory is offered for sale.

UNITED STATES RUBBER CO.—DIVIDENDS.

THE directors of the United States Rubber Co., on January 3, declared a quarterly dividend of 2 per cent on the first preferred stock, and 1½ per cent on the second preferred stock, from the net earnings, payable January 31, to shareholders of record on January 15. The company report net earnings for the nine months ending December 31 (December partially estimated) of approximately $3,206,176, which includes dividends amounting to $552,247 received upon stock of the Rubber Goods Manufacturing Co.

REDUCED TRAVEL RATES TO NEW YORK.

THE Merchants' Association of New York announces that merchants' rates to the city will be in effect from Trunk Line Association territory on February 23-26, inclusive, and March 16-19, inclusive, with the customary 15 day return limit. The special rate will be, as usual, a fare and one third for the round trip. Roughly described, trunk line territory extends from the New England-New York border west to and including Buffalo and Salamanca, N. Y.; Erie and Pittsburgh, Pa.; Wheeling, Parkersburg, and Huntington, W. Va., south to the Potomac river and the line of the Chesapeake and Ohio railroad. The rate does not apply from points in New Jersey, Pennsylvania, and New York State less than 100 miles distant from the metropolis. The merchants who take advantage of these rates will register at the Association's new headquarters, The Merchants' Association Building, Nos. 66-72 Lafayette street (formerly Elm street).

DUTY ON COTTON ELASTIC BRAIDS.

CERTAIN cotton elastic braids imported at New York were assessed for duty at 60 per cent. *ad valorem*, under paragraph 339 of the Tariff Act, which relates to cotton or flax braids, "whether composed in part of india-rubber or otherwise." The importer protested, on the ground that the goods should be classified under paragraph 449, relating to "manufactures of bone, chip, glass, horn, india-rubber - - - or of which these substances or either of them is the component material of chief value - - - 30 per cent. *ad valorem*." Testimony was offered to show the component material of chief value in the articles, but the United States general appraisers at New York decided: "We do not think the question of the proper classification of these goods is to be determined by a comparison of the value of the textile and india-rubber component materials in them. We think that braids made of cotton or other vegetable fiber and of india-rubber, irrespective of the value of the rubber component are properly dutiable under paragraph 339."

A SALESMEN'S CONVENTION AT CLEVELAND.

THE third annual salesmen's convention of The Ohio Rubber Co., at the Hollenden, Cleveland, Ohio, on December 28-29, was attended by twenty-two representatives of their houses at Cleveland, Cincinnati, and Pittsburgh. A part of each day was spent in the discussion of various business topics, including the sale of hose, belting, packing, rubber clothing, raincoats, etc. On Friday evening a banquet was served, and on Saturday evening there was a theater party. The convention is referred to as the most delightful and satisfactory yet held by the employés' representatives.

FAIRFIELD RUBBER CO.

FOR nearly a year past the Fairfield Rubber Co. (Fairfield, Connecticut) have been obliged to run their plant at night, and the same busy condition continues. They have put in additional machinery and more power and enlarged their buildings. Their principal product is carriage cloth, but the coming of the automobile has led to the addition of a number of motoring accessories to their line of products. The present members of the company are: E. W. Harral, president; A. C. Wheeler, treasurer; F. M. Goodell, secretary, and Major W. W. Harral, manager, with F. D. Hotchkiss, superintendent.

NEW COMPANIES AND CHANGES.

BAKER Rubber Cement Co. have been incorporated under the laws of Massachusetts, with $25,000 capital authorized, to succeed to the business of Charles F. Baker & Co., rubber cement manufacturers, No. 48 Lincoln street, Boston. The directors are: James H. Broughton (president), Charles F. Baker (treasurer), and Emma G. Sawtell. The factory is in Dorchester.

Archer Rubber Co. have been incorporated under the Massachusetts laws, with $3000 paid capital, to engage in the waterproofing trade at Milford, Mass. Calvert B. Archer, who resigned recently as superintendent of the Milford Rubber Co., is president; John T. Callahan, vice president, and C. E. Jones, treasurer and clerk.

The Osius Chemical Co., Inc., is a new company engaged in the manufacture of dental vulcanite and dental specialties at Muskegon, Michigan. They manufacture also some of the chemical preparations of Dr. Frederick Osius, who is president and superintendent of the company. Mr. R. Osius is secretary and treasurer. The office of the company is at No. 125 Monroe street, Grand Rapids, Michigan.

IMPROVEMENTS AND ADDITIONS.

THE improvements and additions made by the Apsley Rubber Co. (Hudson, Massachusetts) during 1906 include a six story addition, 110 x 60 feet, to their shoe factory; an extension of their box and last factory, in which is embraced a storehouse capable of storing 300,000 blocks for making lasts; and a line of coal pockets, convenient to the Boston and Maine railroad tracks, large enough for 5000 or more tons of coal.

The Boston Woven Hose and Rubber Co. has purchased a lot of land equal in area to that which the factory now occupies at Cambridge, Massachusetts, and on this will soon erect several large buildings.

George Borgfeldt & Co., the extensive New York importers—whose stock embraces hard and soft rubber goods—announce

that, in view of the continued growth of their business, they have opened a new and commodious department, at Nos. 43-51 West Fourth street, in which will be located their house furnishing department, in readiness from February 1.

FACTORY STARTS AT NORTH BROOKFIELD.

THE factory of the B. & R. Rubber Co., lately organized at North Brookfield, Massachusetts, by Thomas G. Richards and Charles C. Beebe, was put in operation during the past month. They have been busy making up samples, beginning with tubing and heels, and will gradually add other lines of mechanical goods and specialties.

NEW ENGLAND RUBBER CLUB DINNER.

THE New England Rubber Club dinner, to be held on February 13, at the New Algonquin Club, Boston, promises to be one of the most notable that the Club has yet enjoyed. The executive committee, while furnishing abundant food for thought in the addresses of such men as Mr. T. E. Byrnes, first vice president of the New York, New Haven and Hartford railroad, and others, have also provided most effectively for the entertainment of the members of the Club by securing men, for example, like Frank Lincoln, known the world over as the best American after dinner story teller.

GETTING TO WORK AT ANDOVER.

THE Andover Rubber Co. (Andover, Massachusetts), the incorporation of which was reported in the last INDIA RUBBER WORLD (page 127), have awarded contracts for the erection of a factory building of brick, two stories, 50 x 120 feet, on Railroad street. Meanwhile a frame building has been erected, in which the company hope to be ready to begin making dipped goods by February 21. Later the company may engage in making pneumatic and solid rubber vehicle tires. Mr. Matthew S. Hannan is president of the new company. He was formerly in the employ of the Tyer Rubber Co., and for some time past has been operating a rubber plant at Ballardvale, Mass.

FOR A CO-OPERATIVE RUBBER SHOE FACTORY.

A NEW scheme of industrial coöperation is being developed at Malden, Massachusetts, under the name Skill-Brains Union Co., to combine "brains" and "skill" in manufacturing enterprises. Among other projects is the "Skill-Brain Rubber Co.," for which a prospectus is issued, inviting subscriptions of capital. It is stated that "rubber boots and shoes of all kinds will be manufactured and marketed—but other rubber goods will be made when the business gets fully developed."

TRADE NEWS NOTES.

IT is reported that a committee of the board of the United States Rubber Co., after an examination of the two mills of the Glenark Knitting Co. (Woonsocket, Rhode Island), reported against their purchase. Later, on January 17, the sale of the Glenark company's "Colchis" mill was reported, at something like $90,000, to a purchaser not named, but stated not to be the United States Rubber Co.

The Rockland Elastic Fabric Co. is the name of a new concern organized at Rockland, Massachusetts, to make narrow elastic fabrics. They have begun work at the Rockland Webbing Co. plant. Chester Woodward and C. D. Stringer are interested.

The Boston Rubber Shoe Co. have distributed some small metal signs that are exceedingly artistic. They look like solid pieces of antique bronze covered with verdigris. The signs are 10 x 14 inches and are hung with a green bronze chain, matching the general color scheme of the sign.

The American Can Co. (New York) furnish not only cups for collecting rubber latex, and cans and tanks for cement and other materials used in the rubber manufacture, but an almost unlimited variety of metal goods for other trades, including about everything in tin that a druggist can need.

TRADE NEWS NOTES.

THE position of traffic manager of the United States Rubber Co. (New York), vacated recently by Mr. John M. Galloway, has been filled by the appointment of Mr. George F. Hichborn.

The H. W. Johns-Manville Co. (New York) have opened a branch office, for the sale of their insulation products, in New Orleans, at Baronne and Perdillo streets, in charge of Mr. W. E. Carpenter.

The factory of the Hood Rubber Co., at East Watertown, Massachusetts, was closed on January 5 for a nine-days' vacation. After resumption of work a 9-hour day was adopted instead of 10 hours.

A dinner was given to a number of selling agents of the United States Rubber Co., by Mr. Eben H. Paine, manager of sales of the company, at the New Algonquin Club, Boston, on the evening of January 10. It was an attractive dinner, with covers for 15, on a round table, and was thoroughly enjoyed.

The registered office of the Intercontinental Rubber Co., the incorporation of which was chronicled in the last INDIA RUBBER WORLD, *is* with the Registrar and Transfer Co., No. 15 Exchange place, Jersey City, New Jersey.

The assets of E. M. Moer's Sons, dealers in scrap rubber and other waste materials, at Nos. 5-9 James slip, New York, have been placed in the hands of a receiver in bankruptcy, on the petition of creditors for $2166. Rufus W. Sprague, Jr., was appointed receiver on January 7.

The Home Rubber Co. (Trenton, New Jersey) are very much pleased over an item which appeared in the London *Standard* concerning their "N. B. O." sheet packing, which is as follows: "We know of an instance where this packing is being used for jointing cylinder covers of an engine using steam at 400 pounds per square inch, with a temperature of over 700° F., without any trouble being experienced."

The "Motorman's" shoe made by the Wales-Goodyear Shoe Co. is a very strong, serviceable, high lace gaiter, with snow excluding fold. It has double soles, solid heel, and a leather insole. It is exceedingly popular among motormen and all others who have to be out doors much in inclement weather.

The Mexican Crude Rubber Co. (Viesca, Coahuila, Mexico), manufacturers of "Viesca Standard" guayule rubber, write to THE INDIA RUBBER WORLD that they are in the market for machinery and labor saving devices for the extraction of guayule rubber from the shrub. They have, by the way, offices not only in Viesca, Mexico, but at No. 210 Mermod-Jaccard building, St. Louis, Missouri.

After all, it takes a practical rubber man to successfully sell compounding ingredients. Frank Reifsnider, for example, in introducing his aluminum flake and to show its heat resisting qualities, takes two samples of vulcanized rubber, one containing his ingredient, and the other without, and puts them in boiling water and the rubber manufacturer thus becomes his willing customer.

Mr. Harry S. Quine, managing editor of the Akron (Ohio) *Times-Democrat*, who was formerly advertising manager for The Diamond Rubber Co., advises THE INDIA RUBBER WORLD that the *Times-Democrat* will soon make a feature of a rubber column to appear, at least, two or three times a week, and which will contain all the live news of the local rubber field.

The material advertised under the name "Compo rubber roofing," by The Lincoln Waterproofing Cloth Co. (Bound Brook, New Jersey), as being waterproof and durable, does not, it is understood, contain any rubber. The name used is part of a registered trade-mark, but it is explained that a "rubber-like compound" might be more accurate.

The new "Vacation" shoe is proving one of the best sellers among the popular line of summer shoes made by the United States Rubber Co. It is the acme of cool comfort, good looks, and solid wear.

TRADE NEWS NOTES.

THE corporate existence of the Wheeler & Wilson Manufacturing Co., long prominent in the sewing machine trade, has ceased, in view of the merger of their business with the Singer Manufacturing Co.

The annual meeting of shareholders of the New York Rubber Co., for the election of trustees, was held at the company's offices in New York on January 29.

Mr. Robert J. Firestone has been appointed sales manager of the Firestone Tire and Rubber Co., with headquarters at Akron, Ohio.

Articles of incorporation have been filed by the Standard Rubber Manufacturing and Supply Co., under the laws of New Jersey, with $100,000 capital. Incorporators: Stephen C. Cook, Ignatius L. Jambre, Albert A. Taylor, Jr., and Charles L. Conard. Registered office: No. 147 East State street, Trenton.

H. M. Shepard, for some time past president and general manager of the Elkhart Rubber Works (Elkhart, Indiana), has retired from that company and will be at the head of a new company formed to manufacture tires and mechanical rubber goods, on a larger scale, in the same city.

RUBBER FOOTWEAR PRICES.

THE United States Rubber Co. on January 14 issued a circular to their customers, introduced as follows: "Referring to our circular letter of October 6, 1906, wherein we notified you that our contract for the coming season would be issued on March 1, 1907, we now advise you that at the urgent request by and in behalf of many of our customers, we will issue our new contract as of January 16, 1907, cancelling the one now in force, dated January 2, 1906."

It is stated that the gross price list for the season of 1907 will be the same as last year, and subject to change without notice. The discounts to retailers remain as before, except that they are also subject to change without notice. They are as follows:

First quality (except Woonsocket and Meyer)..... 25 @ 3 %
Woonsocket and Meyer brands..... 25 @ 5 @ 3 %
Second quality (except Rhode Island and Jersey). 25 @ 3 @ 10 %
Rhode Island and Jersey..... 25 @ 5 @ 3 @ 10 %

There will be no extra discount for early orders, but a cash discount will be allowed at the rate of 7 per cent per annum for prepayment of accounts rendered for shipment to March 31, and at the rate of 12 per cent on accounts rendered for shipment on and after April 1.

* * *

REFERRING to a report which has appeared very generally in the newspapers that prices of rubber boots and shoes have been advanced 5 per cent., it may be said here that the same appears to be due to a misapprehension. As stated above, there is no change in lists or discounts this year, unless comparison be made with the period between January 1 and April 1, 1906. At the beginning of last year an extra discount of 5 per cent. was announced to induce the placing of early orders, but this offer expired on April 1. No extra discount is allowed this year, which leaves net prices to retailers unchanged since April 1 last.

RUBBER MEN AT DINNER.

THE concerns named below were represented at a dinner at Sherry's, in New York, on Friday evening, January 18. The dinner was attractively served at a round table, at which there were 44 guests. It was an informal affair, greatly enjoyed by those present. There was no regular toastmaster and no formal after-dinner speeches, though short addresses were made by Messrs. John J. Voorhees, Welling G. Sickel, Charles A. Daniels and H. E. Raymond. The dinner was presided over by Mr. William Hillman. The firms represented were:

Crescent Belting and Packing Co., Easthampton Rubber Thread Co., Electric Hose and Rubber Co., Empire Rubber Manufacturing Co., Eureka Fire Hose Co., Fabric Fire Hose Co., Firestone Tire and Rubber Co., The B. F. Goodrich Co., Manhattan Rubber Manufacturing Co., New York Belting and Packing Co., Limited, New York Rubber Co., Pennsylvania Rubber Co., Peerless Rubber Manufacturing Co., Quaker City Rubber Co., Republic Rubber Co., Revere Rubber Co., Rubber Goods Manufacturing Co., United and Globe Rubber Manufacturing Cos., Voorhees Rubber Manufacturing Co., Manufactured Rubber Co., U. S. Rubber Reclaiming Works, Trenton Rubber Reclaiming Works, Derby Rubber Co., W. H. Cummings & Sons, New York Commercial Co., J. P. Devine Co., The Carter Bell Manufacturing Co., Continental Rubber Co., J. H. Lane & Co., Farrel Foundry and Machine Co., and Osgood Sayen.

EUREKA FIRE HOSE CO.

IT is understood that the shares in the Eureka Fire Hose Co. (New York) held by the estate of the late John Van Dussen Reed have changed ownership. Mr. Reed was one of the founders of the company, in 1875, and at his death in 1892 held a controlling interest. The officers of the company to-day are Benjamin L. Stowe, president; George A. Wies, vice-president and treasurer, and N. F. McKeon, secretary. Mr. McKeon, who is a practical rubber man, also becomes general factory manager. The directors are Messrs. Stowe and Wies, and James Boyd, of the Philadelphia house of James Boyd & Brother, dealers in mechanical rubber goods. Mr. Stowe was interested with Mr. Reed at the inception of the company and, beginning with 1875, has been the inventor of many improvements in mechanism for circular hose weaving which are utilized by the Eureka company. Mr. Wies, who entered the employ of the company at the beginning, has grown up with the business and taken an active part in its large expansion. The family of Mr. Boyd have been identified with the development of rubber lines cotton fire hose for nearly a half century, a patent on such hose having been granted to a member of the family as early as 1859.

UNITED STATES RUBBER CO. SHARES.

FIRST PREFERRED STOCK, $35,067,000.
Last Dividend, October 31, 1906—2%.

	1902.	1903.	1904.	1905.	1906.
Shares sold....	104,202	62,343	182,443	200,497	123,760
Highest price..	64	58	100	118½	115

Highest, 1906, January 15; Lowest, July 13; Closing, 107¼.

SECOND PREFERRED STOCK, $9,586,300.

Lowest price...	49½	30¼	41	98⅜	104¾

Last Dividend, October 31, 1906—1½%.

	1905.	1906.
Shares sold.....	21,550	59,845
Highest price.....	83¾	87½
Lowest price.....	75	75

Highest, 1906, January 15; Lowest, May 2; Closing, 78½.

COMMON STOCK, $25,000,000.
Last Dividend, April 30, 1900—1%.

	1902.	1903.	1904.	1905.	1906.
Shares sold....	53,356	80,890	285,819	723,665	607,800
Highest price..	19⅜	19⅛	34½	58½	59½
Lowest price...	14	7	10½	33¾	38

Highest, 1906, October 2; Lowest, July 13; Closing, 51.

MR. HARRY HAZARD SHEPARD, formerly general manager of the National India Rubber Co., has been reappointed a member of the state board of charities and corrections of Rhode Island, the term dates from February 1.

IT is commonly reported in Canada that two rubber shoe manufacturing companies in the Dominion have been purchased by interests friendly to the Consolidated Rubber Co., Limited, and are likely soon to pass into the control of the latter, but up to date no corroboration of the report is obtainable beyond an admission of the change in control of the two companies.

A BOOK ON RUBBER TIRES.

RUBBER TIRES AND ALL ABOUT THEM. PNEUMATIC, SOLID, Cushion, Combination—For Automobiles, Omnibuses, Cycles and Vehicles of Every Description. By Henry C. Pearson, Editor of THE INDIA RUBBER WORLD. New York: The India Rubber Publishing Co. 1906. [Cloth. 8vo. pp. 282. Price, $3.]

IN view of the great importance of rubber tires in modern economy, and the fact that within the past few years they have come into such widespread use, it is rather surprising that a comprehensive work relating to them has not appeared until now. If we consider that what is called civilization is the result of intercourse between different peoples, it will be realized that no factor in human progress has been or is of greater importance than transportation. The steam railway brought about a new era in social and commercial life, but it was an innovation no less marked than that which we seem destined to see in the case of the automobile and the allied vehicles, and these would have been impossible without rubber tires.

Not only is the subject of tires of much general interest, therefore, but it is of particular and practical interest to almost every individual nowadays, for who does not own, or hope to own, some sort of rubber tired vehicle? But whoever has sought to become informed in regard to the nature of rubber tires, or their proper use and care, by reading, has had to be content with fragmentary bits picked up at haphazard, with no guarantee that the writers understood their subject.

Our author disclaims any purpose of teaching rubber manufacturers how to make tires. He aims rather to help the rest of the world to choose the particular wheel equipment best suited to each man's needs, and, by explaining the nature of rubber and the construction and function of tires, to show the owner or user how to derive the greatest amount of benefit from his tires. It is in no sense a technical book, and yet there is condensed within its pages the whole theory of what the resilient tire does, and how; why such tires are "fast"; where their weak points lie; the relation of size to capacity, and so on. These are subjects of equal importance to manufacturer and consumer, but whereas the former class has at its command the combined experience of the tire making craft, the individual buyer of a tire is apt to begin with everything to learn, and it is desirable that he should be able to learn it without his experience being too costly. It is for the benefit of the latter that the book before us seems more particularly to be designed.

Starting with chapters on what india-rubber is, and the general details of the rubber manufacture, the author proceeds to tell briefly how rubber tires of different types are made, and the uses for which they are fitted. The question of the proper care of tires is treated fully, and the repairing of damaged tires. There are chapters of historical interest, tracing the development of solid, cushion, and pneumatic tires; a record of tire patents and litigation; and some account of "Where Tires Are Made."

The value of the book is greatly enhanced by about 300 illustrations, relating to every known type of tire, rims, pumps, valves, and other accessories; machines used in tire constructions; and details of repair outfits. In brief, the book is a practical work by a practical man, written in plain language without the use of too many words, and the publishers have brought it out in an attractive form.

H. S.

OBITUARY.

THE death is reported of BENJAMIN F. GOOD, vice president and treasurer of the American Steam Packing Co. (Boston), having occurred on January 10 at Newton Centre, Massachusetts, at the residence of A. Montgomery, his stepfather, and the president of the company named. The company, indeed, was composed of the two here named. Mr. Good had been a member of the New England Rubber Club from the inception of that organization, and at a special meeting of the Club on January 12 the following resolutions were adopted:

WHEREAS, Our friend and associate, Ben F. Good, has been stricken by death and removed from our midst, we, his fellow members, in recognition of our loss, record the following resolutions:

Resolved, That during his connection with the rubber trade, and during his membership in our Club, extending practically over the whole time of its existence, his liberal and generous nature, good heart and the general lovability of his character made of every business acquaintance a personal friend, each one of whom now laments his untimely decease. Straightforward and true in association with his business companions, upright and honest in his dealings with men, the trade has lost a valued member.

Resolved, That we extend to his family, and to his business associates, our deep and sincere sympathy.

Resolved, That these resolutions be spread upon the records of the Club, and that a copy be sent to his family.

ARTHUR W. STEDMAN,
GEORGE P. WHITMORE,
ELSTON E. WADBROOK,
Committee on Resolutions.

The funeral was attended by a delegation from the Rubber Club. Of the six pall bearers, three represented Masonic bodies and three were from business associations. Something more than a year ago Mr. Good suffered a bereavement in the loss of his wife, from which he seemed never to recover.

* * *

THE many friends of Mr. Theodore S. Bassett, president of the U. S. Rubber Reclaiming Works, will be pained to hear of the sudden death of his wife, which occurred on January 27, at their residence at Milford, Connecticut. Mrs. Bassett was the eldest daughter of the late Harmon K. and Caroline B. Wells. There were funeral services at the Second Congregational Church at Derby, Conn., on January 30.

* * *

THE death is reported of Mrs. Mary E. Sawyer, on January 18, at the residence of her son-in-law, Mr. B. G. Work, president of The B. F. Goodrich Co., at Akron, Ohio. Mrs. Sawyer was Miss Mary E. Monsaratt, of Louisville, Kentucky, at the time of her marriage to the late Ezra Thomas Sawyer, who became president and general manager of the Easthampton Rubber Thread Co. (Easthampton, Massachusetts), which position he filled for more than 20 years. Mr. Sawyer died in the latter part of 1897, and during most of the time since his widow has resided with her daughter in Akron.

THE TEXTILE GOODS MARKET.

THE present consumption of cotton by the rubber trade—especially in its mechanical and hose and belting departments—has never been equaled in the history of the trade. The capacity of the principal mills in the cotton industry has been and is being overtaxed, despite which the call of these branches of the trade is not being satisfied. As far as can be determined this paucity of supply is attributable to the inadequate facilities for the production of the finished article, rather than on account of any scarcity of raw cotton. The existing demand is claimed to be abnormal and there is no doubt that the mills could readily meet the requirements of an ordinary market.

The general situation is reflected in a published report, showing an increase in the movement of cotton into sight in the week ending January 19, compared with the corresponding period last year, in round figures, of 215,000 bales, an increase over year before last of 262,000, and an increase over 1904 of 174,000. For 140 days of the season the aggregate is ahead of last year 1,526,000 bales, ahead of year before last 578,000, and ahead of 1904 by 152,000. The total movement for the United States for 140 days of the season from September 1, amounts to 9,153,674 bales, against 7,627,237 last year, 8,575,262 year before last, and 7,633,309 in 1904.

The report of the world's visible supply shows a steady increase, the gains for the past week being 105,579 bales, as against a decrease of 67,161 year before last.

The total visible s 5,479,706.

The recently issued government report shows the amount of cotton ginned to January 16 to have been 12,167,873 bales.

Review of the Crude Rubber Market.

THE arrivals at Para of rubber of all grades during 1906 were only slightly in excess of those for the preceding year. This may be accounted for in part by the delay of important lots upstream, due to low water. The arrivals since July 1, the beginning of the crop season, were less than for the same period a year ago. Taking the world's production as a whole, an increase has been shown. Consumption has increased at an equal rate, so that prices have been maintained on an unprecedentedly stable basis. American imports of crude rubber during 1906 exceeded those of any former year by some 1,300 tons. Exports were larger, however, but stocks at the end of the year were smaller than at the beginning. The reported deliveries to manufacturers (including Canada) were larger by 400 tons than in 1905. Both imports and consumption in the United States have doubled within ten years, and consumption has more than trebled in thirty years.

Following is a statement of prices of Para grades, one year ago, one month ago, and on January 29—this date:

PARA.	Feb. 1, '06.	Jan. 1, '07	Jan. 29.
Islands, fine, new	122@123	118@119	118@119
Islands, fine, old	none here	none here	none here
Upriver, fine, new	126@127	123@124	123@124
Upriver, fine, old	none here	127@128	127@128
Islands, coarse, new	73@ 74	72½@ 72	72@72½
Islands, coarse, old	none here	none here	none here
Upriver, coarse, new	93@ 94	97@ 98	97½@98
Upriver, coarse, old	none here	none here	none here
Caucho (Peruvian) sheet	74@ 75	76@ 77	78@79
Caucho (Peruvian) ball	74@ 75	95½@ 96	96@ 97
Ceylon (Plantation) fine sheet	86@ 87	137@138	137@138

AFRICAN.		CENTRALS.	
Sierra Leone, 1st quality	108 @108½	Esmeralda, sausage	94@95
Massai, red	108 @108½	Guayaquil, strip	76@77
Benguella	78 @ 79	Nicaragua, scrap	92@93
Cameroon ball	77 @ 78	Panama, slab	70@71
Accra flake	22 @ 23	Mexican, scrap	93@94
Lopori ball, prime	116½@117	Mexican, slab	71@72
Lopori, strip, prime	107 @108	Mangabeira, sheet	67@71
Madagascar, pinky	90 @ 91	Guayule	44@45
Ikelemba	117½@118	EAST INDIAN.	
Soudan niggers	93 @ 94	Assam	94@95
		Borneo	40@50

Late Para cables quote:

Per Kilo		Per Kilo	
Islands, fine	s$550	Upriver, fine	6$975
Islands, coarse	2$650	Upriver, coarse	4$875

Exchange, 15 9-16*d.*

Last Manaos advices:

Upriver, fine	6$600	Upriver, coarse	4$100

Exchange, 15 17-32*d.*

NEW YORK PRICES FOR DECEMBER (NEW RUBBER).

	1906.	1905.	1904.
Upriver, fine	1.22@1.24	1.23@1.29	1.18@1.30
Upriver, coarse	.96@ .98	.90@ .97	.89@ .97
Islands, fine	1.18@1.20	1.20@1.26	1.14@1.26
Islands, coarse	.71@ .73	.71@ .77	.65@ .72
Cametá, coarse	.72@ .74	.72@ .78	.65@ .71

In regard to the financial situation, Albert B. Beers, broker in crude rubber and commercial paper, No. 68 William street, New York, advises us:

"During the first 10 days of January the money market continued about the same as for two months previously, with very little demand for paper, and only at high rates averaging about 7 per cent, but since the middle of the month there has been an increasing demand from city and out-of-town banks, but at full rates, 6 @ 6½ per cent."

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.

	Fine and Medium.	Coarse.	Total. 1906.	Total. 1905.	Total. 1904.
Stocks, November 30....*Tons*	94	4 =	98	154	7
Arrivals, December	1580	556 =	2136	1288	1705
Aggregating	1674	560 =	2234	1442	1712
Deliveries, December	1501	557 =	2058	1320	1643
Stocks, December 31	173	3 =	176	122	69

	PARA.			ENGLAND.		
	1906.	1905.	1904.	1906.	1905.	1904.
Stocks, Nov. 30....*Tons*	860	395	540	380	505	180
Arrivals, December	2555+	2985	3220	735	1090	670
Aggregating	3415	3380	3760	1115	1595	850
Deliveries, December	3415	2795	3560	+750	1025	675
Stocks, December 31	0+	585	200	+365	570	175

	1906.	1905.	1904.
World's visible supply, December 31..*Tons*	1,978	2,589	2,444
Para receipts, July 1 to December 31	13,400	13,595	12,551
Para receipts of Caucho, same dates	1,205	1,035	779
Afloat from Para to United States, Dec. 31	952	652	1,520
Afloat from Para to Europe, December 31	485	660	480

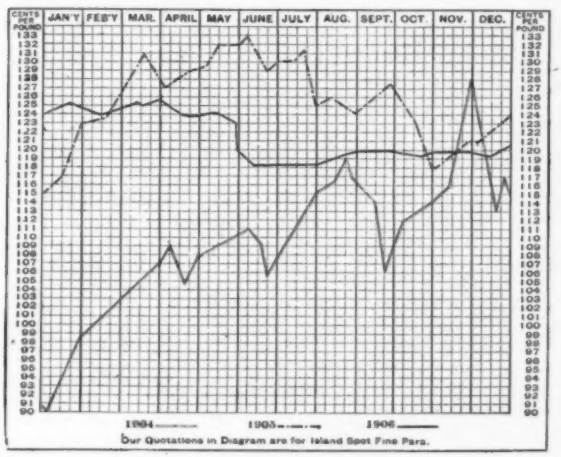

CHART SHOWING FLUCTUATIONS IN ISLANDS SPOT FINE PARA RUBBER AT NEW YORK, FOR THREE YEARS.

London.

PLANTATION RUBBER.

JANUARY 4.—At to-day's auction 357 packages of plantation rubber from Ceylon and the Malay States were offered, of which 292 found buyers. The total weight exceeded 21 tons, of which Ceylon contributed 9 tons. The market opened with a good demand, fine crepe being keenly competed for and fetching the highest price paid—5*s.* 9½*d.* [=$1.40 4-5] per pound—for one case from Lanadron estate. A fine lot of block rubber from Lanadron, of over two tons, was offered, but withdrawn for private treaty. A lot of rambong (*Ficus*) crepe realized 5*s.* 0¼*d.* [=$1.22⅛] per pound. The average realized for all the

plantation soils sold was 5*s.* 3½*d.* [=$1.28¾]. The highest price for plantation one year ago was 6*s.* 2*d.* [=$1.50]. Highest price for Amazon Pará to-day, 5*s.* 2½*d.* [=$1.26⅛]; last year, 5*s.* 4½*d.* [=$1.30¾]. Decline in plantation for the year, 6½ per cent.; decline in Pará, fine, 3½ per cent.

JANUARY 11.—Lewis & Peat report: "Plantation Grown Pará.—There is a good demand for good quality sheets, biscuits, crepe, and block, at 5*s.* 7*d.*@5*s.* 8*d.* [=$1.35⅞@$1.37⅞] per pound, and a small business has been done privately." No auctions this week.

JANUARY 18.—About 31 tons of plantation rubber were offered to-day and found buyers at higher prices. The highest price paid was 5*s.* 11*d.* [=$1.44] per pound, for 1 case of Ceara biscuits from Rangbodde estate, Ceylon. The next highest price was 5*s.* 10¾*d.* for crepe, from the Consolidated Malay Rubber Estates, Limited. The average paid for plantation sorts was 2¾*d.* [=5⅛ cents] higher than at the preceding auction.

At a meeting of the directors of the Rubber Goods Manufacturing Co. (New York, January 24) the question was considered of liquidating the company as a separate corporation, now that its shares are held by the United States Rubber Co. No decision was reached, and the matter is expected to be taken up at the next meeting of the board.

Liverpool

EDMUND SCHLUTER & Co. report [December 31]:

Pará Rubber.—Pará grades were somewhat less active during the month than during November. The expectations of larger arrivals from Brazil were not realized, as the continued low water in the rivers made it impossible for the reported stocks in the interior to come down. In consequence, prices hardened a little, and quotations at the close were dearer. Inasmuch as it is impossible to say when the predicted large increase of receipts at Manáos and Pará will take place, it is difficult to form an opinion about prices, but the available supplies at the consuming markets during the next few weeks will be small and prices therefore cannot be expected to recede. This is especially the case with caucho, the proportion of which in the arrivals at Manáos is exceedingly small.

WORLD'S VISIBLE SUPPLY OF PARA, DECEMBER 31.

	1906.	1905.	1904.	1903.	1902.
Tons	2183	2740	2648	3351	3365
Prices, hard fine	5/2½	5/5	5/1¾	3/11½	3/9

LIVERPOOL STOCKS OF AFRICAN RUBBER, DECEMBER 31.

1906.....287	1903.....255	1900.....770
1905.....300	1902.....375	1899.....576
1904.....398	1901.....586	1898.....470

Rubber Scrap Prices.

New York quotations—prices paid by consumers for carload lots in cents per pound—are higher than one month ago.

Old Rubber Boots and Shoes Domestic	12⅜ @ 12⅝
Do —Foreign	10½ @ 10⅝
Pneumatic Bicycle Tires	7½ @ 7¾
Automobile Tires	10 @ 10⅜
Solid Rubber Wagon and Carriage Tires	8¼ @ 8⅞
White Trimmed Rubber	11½ @ 11¾
Heavy Black Rubber	5½ @ 5⅝
Air Brake Hose	4¾ @ 5
Fire and Large Hose	3⅝ @ 3¼
Garden Hose	2½ @ 2¾
Matting	1½ @ 1⅝

IMPORTS FROM PARA AT NEW YORK

[The Figures Indicate Weights in Pounds.]

December 27.——By the steamer *Cameteuse*, from Manaos and Para:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
General Rubber Co.	287,500	77,400	124,200	800=	489,900
Poel & Arnold	174,300	55,200	143,900	21,100=	394,500
A. G. Morse & Co.	129,100	21,300	45,000	.....=	195,400
New York Commercial Co.	147,800	32,000	42,400	500=	222,700
C. P. dos Santos	34,900	2,800	13,900	600=	52,200
Edmund Reeks & Co.	15,900	5,800	21,900	.....=	43,600
Neale & Co.	10,000	.....	15,700	.....=	26,000
W. E. Peck & Co.	11,100	.....	.....	.....=	11,100
Total	810,900	194,500	407,000	23,000=	1,435,400

January 3.——By the steamer *Boniface*, from Manaos and Para:

General Rubber Co.	108,400	19,600	118,200	2,000=	248,200
Poel & Arnold	93,400	27,700	62,400	100=	183,600
New York Commercial Co.	77,300	12,200	30,900	1,000=	121,400
A. G. Morse & Co.	68,500	7,200	36,200	.....=	111,900
Edmund Reeks & Co.	68,300	11,000	23,500	.....=	102,800
Neale & Co.	36,800	3,500	52,700	.....=	93,000
C. P. dos Santos	35,400	9,600	37,800	900=	83,700
Hagemeyer & Brunn	13,700	.....	7,900	.....=	21,600
Total	501,800	90,800	369,600	4,000=	966,200

January 14.——By the stetamer *Cearense*, from Manaos and Para:

Poel & Arnold	106,400	33,600	143,300	1,200=	284,500
New York Commercial Co.	104,200	40,000	40,400	.....=	184,600
General Rubber Co.	72,500	10,000	80,300	.....=	162,800
A. G. Morse & Co.	104,400	18,500	21,900	15,800=	160,600
Edmund Reeks & Co.	44,600	7,800	29,600	.....=	82,000
C. P. dos Santos	43,900	5,700	12,300	.....=	61,900
Hagemeyer & Brunn	23,100	.....	21,300	.....=	44,400
Neale & Co.	8,500	1,400	18,200	300=	28,400
Total	507,600	117,000	367,300	17,300=	1,009,200

NOTE.—The steamer *Cuthbert*, from Para, is due at New York February 8, with 525 tons rubber.

PARA RUBBER VIA EUROPE

DEC. 21.—By the *Prins Frederick*=Mollendo:

		POUNDS.
W. R. Grace & Co. (Caucho)		18,000

DEC. 24.—By the *Pennsylvania*=Hamburg:

General Rubber Co. (Fine)	9,000	
A. G. Morse & Co. (Fine)	3,500	12,500

DEC. 24.—By the *Umbria*=Liverpool:

New York Commercial Co. (Fine)	25,000	
Robinson & Stiles (Fine)	25,000	
General Rubber Co. (Fine)	9,000	59,000

DEC. 26.—By the *Bovic*=Liverpool:

Poel & Arnold (Fine)	100,000	
New York Commercial Co. (Fine)	35,000	
New York Comm'l Co. (Coarse)	6,000	141,000

DEC. 28.—By the *Magdelana*=Mollendo:

New York Commercial Co. (Fine)	13,500	
New York Comm'l. Co. (Coarse)	1,500	
A. D. Hitch & Co. (Coarse)	3,000	18,000

DEC. 29.—By the *St. Laurent*=Havre:

Poel & Arnold (Caucho)		11,000

DEC. 31.—By the *Caronia*=Liverpool:

General Rubber Co. (Fine)		17,500

JAN. 5.—By the *Patricia*=Hamburg:

A. G. Morse & Co. (Fine)		25,000

JAN. 14.—By the *Carmania*=Liverpool:

Poel & Arnold (Coarse)		18,000

JAN. 19.—By the *Atrato*=Mollendo:

New York Commercial Co. (Fine)	8,000	
New York Comm'l. Co. (Coarse)	2,000	
A. D. Hitch & Co. (Coarse)	3,000	13,000

JAN. 21.—By the *Campania*=Liverpool:

General Rubber Co. (Fine)	15,500	
Poel & Arnold (Fine)	30,000	45,500

OTHER ARRIVALS AT NEW YORK

CENTRALS.

DEC. 21.—By the *Eithel Frederick*=Colon:

	POUNDS.
Hirzel, Feltman & Co.	14,200

DEC. 22.—By the *Segurance*=Frontera:

Harburger & Stack	2,000	
E. Steiger & Co.	1,500	
Graham, Hinkley & Co.	1,000	
H. Marquardt & Co.	500	
American Trading Co.	500	5,500

DEC. 24.—By the *Finance*=Colon:

Hirzel, Feltman & Co.	4,600	
Dumarest Bros. & Co.	4,200	
G. Amsinck & Co.	3,900	
L. Johnson & Co.	3,500	
Andeau Trading Co.	3,500	
A. Santos & Co.	3,400	
Roldau & Van Sickle	1,500	
Isaac Brandon & Bros.	1,500	
American Trading Co.	1,500	
Jose Iulia & Co.	1,800	
Aramburo Inc'pn	1,900	
Meyer Hecht	1,200	
E. V. Harrman Co.	1,200	
R. G. Barthold	600	34,300

DEC. 24.—By the *Cienfuegos*=Tampico:

Edward Maurer	55,000	
W. C. Coleman & Co.	7,500	62,500

DEC. 24.—By the *Pennsylvania*=Hamburg:

Poel & Arnold		11,000

CENTRALS—*Continued.*

DEC. 24.—By the *Umbria*=Liverpool:

General Rubber Co.	11,500	
A. W. Brunn Co.	4,500	16,000

DEC. 24.—By the *Gayas*=Bahia:

New York Commercial Co.	2,500	
A. D. Hitch & Co.	2,500	
American Commercial Co.	4,500	9,500

DEC. 26.—By the *Colon*=Colon:

G. Amsinck & Co.	4,000	
Meyer Hecht	1,000	5,000

DEC. 26.—By the *Bovic*=Liverpool:

Geo. A. Alden & Co.	34,000	
Poel & Arnold	8,000	42,000

DEC. 27.—By the *Oceanic*=Liverpool:

Poel & Arnold		45,000

DEC. 27.—By the *Cameteuse*=Ceara:

Emilio Boris		5,000

DEC. 28.—By the *El Cid*=Galveston:

Continental & Mexican Co.		22,500

DEC. 27.—By the *Momus*=New Orleans:

Manhattan Rubber Mfg. Co.	8,000	
A. G. Morse & Co.	5,000	
A. N. Rotholz	5,000	
Eggers & Heinlein	3,000	
G. Amsinck & Co.	1,500	22,500

DEC. 28.—By the *Sarnia*=Colombia:

J. A. Pauli & Co.	2,500	
D. A. De Lima & Co.	2,500	
Escobar & Gorgorza Co.	2,000	
A. Hela	1,500	
Luzartee & Whitney	700	
A. D. Straus & Co.	500	

CENTRALS—*Continued.*

A. A. Lindo & Co.	500	
J. Brandon & Bros.	500	
G. Amsinck & Co.	500	11,200

DEC. 28.—By the *Magdelana*=Nicaragua:

G. Amsinck & Co.	5,500	
W. R. Grace & Co.	2,000	
E. B. Straub	1,500	
Meyer Hecht	1,000	
Wessels, Kulen, Kamp Co.	500	10,500

DEC. 29.—By the *Merida*=Vera Cruz:

H. Marquardt & Co.	1,500	
Graham, Hinkley Co.	1,500	
W. H. Wadleigh	1,000	4,000

DEC. 31.—By the *Caronia*=Liverpool:

Robinson & Stiles	7,000	
George A. Alden & Co.	5,000	12,000

JAN. 2.—By the *Antilla*=Tampico:

New York Commercial Co.	22,500	
European account	20,000	42,500

JAN. 2.—By the *Batavia*=Hamburg:

George A. Alden & Co.		11,500

JAN. 2.—By the *Comus*=New Orleans:

A. G. Morse & Co.	5,500	
A. N. Rotholz	4,500	10,000

JAN. 4.—By the *Advance*=Colon:

Andean Trading Co.	5,500	
Mann & Emdon	2,000	
Kunhardt & Co.	1,000	
G. Amsinck & Co.	500	
Dumarest Bros. & Co.	500	
R. Fabein & Co.	500	10,000

JAN. 4.—By the *El Siglo*=Galveston:

Wilson Trading Co.		3,500

JAN. 5.—By the *Patricia*=Hamburg:

Poel & Arnold		15,500

JAN. 5.—By the *Tagus*=Colombia:

G. Amsinck & Co.	6,500	
Meyer Hecht	1,500	
American Trading Co.	1,500	
J. Brandon & Bros.	1,500	
Kunhardt & Co.	1,000	
C. E. Kenchart	1,000	
A. Held	700	
J. A. Pauli & Co.	700	
D. A. De Lima & Co.	500	
Andreas & Co.	500	
Wessels, Kulem, Kaup Co.	500	15,900

JAN. 5.—By the *Esperanza*=Mexico:

Harburger & Stack	4,000	
H. Marquardt & Co.	2,500	
Wilson Trading Co.	500	7,000

JAN. 7.—By the *Etruria*=Liverpool:

Poel & Arnold	8,000	

JAN. 7.—By the *Washington*=Tampico:

Edward Maurer	56,000	
New York Commercial Co.	22,500	78,500

JAN. 7.—By the *Virgil*=Bahia:

Adolph Hirsch & Co.	9,000	
J. H. Rossback & Bros.	9,000	18,000

JAN. 7.—By the *Virginia*=Colon:

Hirzel, Feltman Co.	8,000	
L. Johnson & Co.	2,200	
A. M. Capen Sons	2,000	
G. Amsinck & Co.	3,500	
A. Rosenthal & Sons	1,000	16,700

JAN. 7.—By the *Proteus*=New Orleans:

Manhattan Rubber Mfg. Co.	1,000	
Eggers & Heinlein	500	1,500

JAN. 8.—By the *Panama*=Colon:

Roldau & Van Sickle	7,600	
Dumarest Bros. & Co.	7,300	
G. Amsinck & Co.	3,400	
A. Santos & Co.	2,600	
Piza, Nephews & Co.	2,600	
Andean Trading Co.	2,200	
L. Johnson & Co.	1,600	
Hirzel, Feltman & Co.	1,500	
National Sewing Machine Co.	1,500	
George A. Alden & Co.	1,100	
Pablo, Calvert & Co.	800	
Isaac Kubie & Co.	500	32,700

JAN. 9.—By the *Siberia*=Colombia:

Kunhardt & Co.	3,000	
Joaquin Ferro	1,000	
Graham, Hinkley & Co.	500	
G. Amsinck & Co.	500	5,000

JAN. 11.—By the *Matanzas*=Tampico:

Poel & Arnold	4,500	
Edward Maurer	1,000	
Harburger & Stack	1,000	6,500

JAN. 12.—By the *Monterey*=Frontera:

Harburger & Stack	2,000	

CENTRALS—*Continued.*

E. Steiger & Co.	2,000	
H. Marquardt & Co.	1,500	
Graham, Hinkley & Co.	1,000	6,500

JAN. 14.—By the *Alleghany*=Colon:

Hirzel, Feltman & Co.	5,500	
L. Johnson & Co.	2,000	
G. Amsinck & Co.	2,000	
E. B. Strout	2,500	
A. M. Capen Sons	1,500	
Mecke & Co.	1,500	
A. Rosenthal's Sons	1,000	
Bortling & DeLeon	500	
European Options	1,500	18,000

JAN. 15.—By the *Prins Joaquim*=Colombia:

J. Brandon & Bros.	3,000	
G. Amsinck & Co.	2,500	
Escabor & Gorgorza	1,500	
Kunhardt & Co.	1,500	
D. A. De Lima & Co.	1,500	
A. A. Lindor & Co.	500	
Luzorte & Whitney	500	10,500

JAN. 16.—By the *Chalmette*=New Orleans:

A. G. Morse & Co.	3,500	
Eggers & Heinlein		3,500
G. Amsinck & Co.	1,000	5,500

JAN. 16.—By the *Cameons*=Bahia:

New York Commercial Co.	25,000	
A. D. Hitch & Co.	14,000	
Adolph Hirsch & Co.	9,500	
J. H. Rossback & Bros.	4,500	53,000

JAN. 18.—By the *El Alba*=Galveston:

Continental-Mexican Co.		50,000

JAN. 18.—By the *Finances*=Colon:

Hirzel, Feltman & Co.	8,000	
G. Amsinck & Co.	8,500	
Jose Julia & Co.	3,000	
Dumarest Bros. & Co.	2,500	
Roldau & Van Sickle	2,000	
L. Johnson & Co.	2,000	
Meyer Hecht	1,500	
Mann & Emdon	7,500	
R. G. Borthold	500	35,500

JAN. 21.—By the *El Mar*=New Orleans:

A. N. Rotholz	6,500	
A. G. Morse & Co.	3,500	
Manhattan Rubber Mfg. Co.	3,500	13,500

JAN. 21.—By the *Yumuri*=Tampico:

Continental-Mexican Co.	70,000	
Edward Maurer	30,000	
E. J. Lawton & Co.	7,000	
H. Marquardt & Co.	1,500	
Graham, Hinkley & Co.	500	109,000

JAN. 21.—By the *Campania*=Liverpool:

General Rubber Co.		7,000

JAN. 21.—By the *Colon*=Colon:

Mann & Emdon	6,000	
G. Amsinck & Co.	3,500	
E. B. Strout	2,000	
Scanz & Co.	1,500	
Andean Trading Co.	1,500	
Jose Julia & Co.	1,500	
J. Brandon & Bros.	1,000	17,500

JAN. 21.—By the *Minneapolis*=London:

General Rubber Co.		15,000

JAN. 22.—By the *Prins Ethel Frederick*=Colon:

Herzel, Feltman & Co.	3,500	
G. Amsinck & Co.	3,000	
E. B. Strout	2,500	
A. Rosenthal's Sons	2,500	
A. M. Capen Sons	1,500	
L. Johnson & Co.	1,000	14,000

JAN. 23.—By the *Vimeria*=Pernambuco:

A. D. Hitch & Co.		4,000

AFRICANS.

DEC. 24.—By the *Pennsylvania*=Hamburg:

A. G. Morse & Co.	59,000	
General Rubber Co.	23,000	
Poel & Arnold	15,500	
George A. Alden & Co.	6,000	
Robinson & Stiles	5,500	109,000

DEC. 24.—By the *Amerika*=Hamburg:

A. G. Morse & Co.	22,500	
General Rubber Co.	13,500	
George A. Alden & Co.	9,000	45,000

DEC. 24.—By the *Kroonland*=Antwerp:

W. L. Gough & Co.	22,500	
Robinson & Stiles	15,000	
Poel & Arnold	8,000	
A. G. Morse & Co.	5,500	
Rubber Trading Co.	4,500	55,500

DEC. 26.—By the *Bovic*=Liverpool:

General Rubber Co.	40,000	
George A. Alden & Co.	15,000	
A. G. Morse & Co.	15,000	
Poel & Arnold	11,500	81,500

AFRICANS—*Continued.*

DEC. 29.—By the *La Lorraine*=Havre:

General Rubber Co.	22,000	
George A. Alden & Co.	11,000	
Robinson & Stiles	7,000	40,000

DEC. 27.—By the *Oceanic*=Liverpool:

Poel & Arnold	45,000	
General Rubber Co.	45,000	
A. G. Morse & Co.	20,000	
George A. Alden & Co.	19,000	
W. L. Gough & Co.	7,000	
A. W. Brunn & Co.	7,000	
Henry A. Gould Co.	5,000	
Rubber Trading Co.	5,000	14,000

DEC. 31.—By the *Caronia*=Liverpool:

General Rubber Co.	45,000	
George A. Alden & Co.	35,000	
A. G. Morse & Co.	11,000	
Livesey & Co.	11,500	102,500

DEC. 31.—By the *Vaderland*=Antwerp:

George A. Alden & Co.	130,000	
Poel & Arnold	125,000	
A. G. Morse & Co.	115,000	
Rubber Trading Co.	15,000	
Western Electric Co.	15,000	
General Rubber Co.	11,000	
Joseph Cantor	10,000	421,000

JAN. 8.—By the *Shimosa*=Singapore:

George A. Alden & Co.	11,000	
W. L. Gough & Co.	11,000	
Heabler & Co.	10,000	
F. R. Muller & Co.	11,000	
Poel & Arnold	25,000	
H. Rauli & Co.	11,000	
Winter & Smillie	11,000	90,000

JAN. 21.—By the *Wildenfels*=Colombo:

A. G. Morse & Co.		8,500

JAN. 21.—By the *Philadelphia*=London:

A. G. Morse & Co.		6,500

JAN. 22.—By the *Minneapolis*=London:

General Rubber Co.		20,000

JAN. 2.—By the *Batavia*=Hamburg:

A. G. Morse & Co.	19,000	
Poel & Arnold (Almedina)	7,000	
Poel & Arnold	17,000	
W. L. Gough & Co.	3,500	
George A. Alden & Co.	3,000	49,500

JAN. 2.—By the *Victorian*=Liverpool:

W. L. Gough & Co.	9,000	
A. W. Brunn & Co.	7,000	16,000

JAN. 5.—By the *Patricia*=Hamburg:

A. G. Morse & Co.		6,000

JAN. 7.—By the *La Bretagne*=Havre:

General Rubber Co.		25,000

JAN. 7.—By the *Etruria*=Liverpool:

Poel & Arnold	7,000	
Raw Products Co.	2,500	9,500

JAN. 9.—By the *Finland*=Antwerp:

Joseph Cantor	22,500	
Rubber Trading Co.	6,500	
W. L. Gough & Co.	7,000	36,000

JAN. 11.—By the *Celtic*=Liverpool:

George A. Alden & Co.	13,500	
A. W. Brunn & Co.	5,500	
Poel & Arnold	3,500	22,500

JAN. 12.—By the *Georgic*=Liverpool:

A. G. Morse & Co.	11,000	
George A. Alden & Co.	4,500	15,500

JAN. 14.—By the *Carmania*=Liverpool:

George A. Alden & Co.	27,000	
Livesey & Co.	18,000	
General Rubber Co.	12,000	
Robinson & Stiles	2,500	59,500

JAN. 14.—By the *Savoie*=Havre:

A. G. Morse & Co.	11,500	
George A. Alden & Co.	10,000	
Poel & Arnold	7,000	
General Rubber Co.	3,500	32,000

JAN. 15.—By the *Hudson*=Havre:

Poel & Arnold	45,000	
George A. Alden & Co.	45,000	
C. P. dos Santos	9,000	
Livesey & Co.	7,000	106,000

JAN. 16.—By the *Pretoria*=Hamburg:

A. G. Morse & Co.		27,000

JAN. 17.—By the *Acilia*=Hamburg:

General Rubber Co.	105,000	
A. G. Morse & Co.	9,000	114,000

JAN. 18.—By the *Kaiser Victoria*=Hamburg:

A. G. Morse & Co.	27,000	
Poel & Arnold	20,000	
George A. Alden & Co.	16,000	63,000

AFRICANS—*Continued.*

JAN. 21.—By the *Campania*=Liverpool:

Poel & Arnold	30,000	
General Rubber Co.	22,500	
George A. Alden & Co.	11,000	
W. L. Gough & Co.	4,500	68,000

JAN. 22.—By the *Zeeland*=Antwerp:

A. G. Morse & Co.	35,000	
Raw Products Co.	7,000	42,000

JAN. 23.—By the *Armenian*=Liverpool:

George A. Alden & Co.	45,000	
General Rubber Co.	11,000	56,000

EAST INDIAN.

DEC. 24.—By the *Swazi*=Colombo:

A. G. Morse & Co.	5,500	
For Akron, Ohio.	6,000	11,500

DEC. 24.—By the *Pennsylvania*=Hamburg:

George A. Alden & Co.		11,000

DEC. 31.—By the *Mesaba*=London:

Robinson & Stiles	8,000	
General Rubber Co.	7,000	
A. G. Morse & Co.	5,000	20,000

JAN. 7.—By the *South America*=Singapore:

Winter & Smillie	11,000	
Heabler & Co.	10,000	21,000

JAN. 7.—By the *Minnetonka*=London:

George A. Alden & Co.	7,000	
A. G. Morse & Co.	4,500	
Poel & Arnold	3,500	15,000

JAN. 7.—By the *Schonfels*=Colombo:

A. G. Morse & Co.		8,500

GUTTA-JELUTONG.

DEC. 24.—By the *Pennsylvania*=Hamburg:

Poel & Arnold		275,000

JAN. 7.—By the *South America*=Singapore:

Heabler & Co.	150,000	
George A. Alden & Co.	125,000	
W. R. Russell & Co.	95,000	
J. W. Phyfer & Co.	110,000	
L. Littlejohn & Co.	55,000	
William Tappenback	110,000	445,000

EAST INDIANS—*Continued.*

JAN. 8.—By the *Shimosa*=Singapore:

H. Rauli & Co.	225,000	
Heabler & Co.	325,000	
George A. Alden & Co.	150,000	
J. W. Phyfer & Co.	55,000	
William Tappenback	125,000	
D. A. Shaw & Co.	125,000	1,005,000

GUTTA-PERCHA AND BALATA.

JAN. 2.—By the *Batavia*=Hamburg:

Robert Soltau Co.		7,000

JAN. 7.—By the *South America*=Singapore:

George A. Alden & Co.	35,000	
Heabler & Co.	10,000	
Joseph Cantor	20,000	65,000

JAN. 8.—By the *Shomosa*=Singapore:

W. L. Gough & Co.		22,000

BALATA.

DEC. 24.—By the *Grenada*=Trinidad:

Thebaud Brothers	72,000	
G. Amsinck & Co.	5,000	77,000

DEC. 27.—By the *Korona*=Demerara:

Middleton & Co.	7,000	
D. A. De Lima & Co.	3,500	10,500

DEC. 31.—By the *Mesaba*=London:

W. L. Gough & Co.	4,500	

JAN. 11.—By the *Maracas*=Ciudad Bolivar:

Thebaud Brothers	6,500	
Frame & Co.	1,000	
Middleton & Co.	1,500	9,000

JAN. 18.—By the *Maraval*=Ciudad Bolivar:

Thebaud Brothers	6,500	
Middleton & Co.	4,500	11,000

JAN. 19.—By the *Parima*=Demerara:

Frame & Co.		15,000

JAN. 21.—By the *Philadelphia*=London:

W. L. Gough & Co.		18,000

JAN. 21.—By the *Minneapolis*=London:

Earle Brothers		11,000

CUSTOM HOUSE STATISTICS

PORT OF NEW YORK—DECEMBER.

Imports:	Pounds.	Value.
India-rubber	7,384,980	$6,375,015
Gutta-percha	15,429	7,313
Gutta-jelutong (Pontianak)	4,145,515	158,953
Total	11,545,924	$6,541,281
Exports:		
India-rubber	148,935	$123,109
Reclaimed rubber	86,497	12,047
Rubber Scrap Imported	2,350,839	$203,889

BOSTON ARRIVALS.

	Pounds.
NOV. 1.—By the *Canadian*=Liverpool:	
Poel & Arnold—African	4,938
NOV. 7.—By the *Bohemian*=Liverpool:	
Poel & Arnold—African	11,563
NOV. 9.—By the *Saxonia*=Liverpool:	
Poel & Arnold—African	4,475
NOV. 13.—By the *Cestrian*=Liverpool:	
Poel & Arnold—African	12,054
NOV. 23.—By the *Bosnia*=Hamburg:	
W. L. Gough & Co.—Balata	4,481
NOV. 26.—By the *Noordam*=Rotterdam:	
George A. Alden & Co.—East Indian	115
Total	37,626
[Value, $25,169.]	

GUTTA-PERCHA.

NOV. 2.—By the *Badenia*=Hamburg:	
H. Rost & Co.	8,599
NOV. 8.—By the *Halifax*—	277
Total	8,876

GUTTA-JELUTONG.

NOV. 28.—By the *Foxley*=Singapore:	
George A. Alden & Co.	676,000

CONSUMPTION OF INDIA RUBBER BY THE UNITED STATES AND CANADA (IN TONS)

[From the Annual Statistical Summary of Albert T. Morse & Co., New York.]

DETAILS.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.
Imports to United States	16420	14643	16182	14333	17671	18620	23095	20468	23208	21842	24760	27623	28635	29936
Exports to Europe	714	391	324	500	250	150	300	450	680	430	490	274	357	1625
	15706	14252	15858	13833	17421	18470	22795	20018	22528	21412	24270	27349	28278	28311
Add Stock on Jan. 1st	1217	1037	1420	558	641	744	591	712	1198	1399	331	256	305	537
	16923	15289	17278	14391	18062	19214	23386	20730	23726	22811	24601	27605	28583	28848
Less Stock close of year	1037	1420	558	641	744	591	712	1198	1399	331	256	305	537	365
Deliveries to Manufacturers	15886	13869	16720	13750	17318	18623	22674	19532	22327	22480	24345	27300	28046	28483

OFFICIAL STATISTICS OF CRUDE INDIA RUBBER (IN POUNDS)

UNITED STATES.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1906	6,690,179	349,309	6,340,870
January-October	53,582,757	2,940,606	50,642,151
Eleven months, 1906	60,272,936	3,289,915	56,983,021
Eleven months, 1905	58,179,800	3,128,286	55,051,514
Eleven months, 1904	55,560,506	3,117,566	52,442,940

GERMANY.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1906	2,887,720	1,355,860	1,531,860
January-October	30,949,380	10,094,480	20,854,900
Eleven months, 1906	33,837,100	11,450,340	22,386,760
Eleven months, 1905	42,222,620	15,687,100	26,535,520
Eleven months, 1904	33,618,200	8,717,720	24,900,480

FRANCE.*

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1906	1,709,620	2,304,500	†594,880
January-October	25,211,340	15,937,460	9,273,880
Eleven months, 1906	26,920,960	18,241,960	8,679,000
Eleven months, 1905	23,991,440	14,783,780	9,207,660
Eleven months, 1904	19,353,840	10,442,960	8,910,880

BELGIUM.‡

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1906	1,464,275	1,983,516	519,241
January-October	17,372,719	12,954,807	4,417,912
Eleven months, 1906	18,836,994	14,938,323	3,898,671
Eleven months, 1905	16,779,796	12,805,227	3,974,569
Eleven months, 1904	16,468,284	14,099,978	2,368,306

GREAT BRITAIN.

MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1906	6,566,672	3,792,880	2,773,792
January-October	55,937,952	29,695,344	26,242,608
Eleven months, 1906	62,504,624	33,488,224	29,016,400
Eleven months, 1905	57,753,136	30,993,536	26,759,600
Eleven months, 1904	51,072,000	30,417,302	20,654,698

NOTE.—German statistics before Jan. 1, 1906, include Gutta-percha, Balata, old (waste) rubber. British figures include old rubber. French, Austrian and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

* General Commerce. † Special Commerce. ‡ Net Exports.

BUYERS' DIRECTORY OF THE RUBBER TRADE.

CLASSIFIED LIST OF MANUFACTURERS AND DEALERS IN INDIA-RUBBER GOODS AND RUBBER MANUFACTURERS' SUPPLIES.

MECHANICAL RUBBER GOODS.

Belting.
Diaphragms.
Gaskets.
Hose (Fire, Garden, Steam).
Mats and Matting.
Mould Work.
Packing.
Tubing.
Valves.
Washers.

Mechanical Rubber Goods—General.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Bowers Rubber Co., San Francisco, Cal.
Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Ct.
Chicago Rubber Wks., Chicago.
Cincinnati Rubber Mfg. Co., Cincinnati.
Cleveland Rubber Co., Cleveland, O.
Continental Caoutchouc & Guttapercha Co., Hanover, Germany.
Dayton Rubber Mfg. Co., Dayton, O.
The Dermatine Co., London.
Dunlop Tire & Rubber Goods Co., Toronto.

Mechanical Goods—General.—Continued.

Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha & Rubber Mfg. Co., Toronto.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., New York.
National India-Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
North British Rubber Co., Ltd., Edinburgh.
Peerless Rubber Mfg. Co., New York.
Pirelli & Co., Milan, Italy.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
Standard Rubber Co., Trenton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
Trenton Rubber Mfg. Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.
Western Rubber Co., Goshen, Ind.
Whitehead Bros. Rubber Co., Trenton, N. J.

Air Brake Hose.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Electric Hose & Rubber Co., Wilmington, Del.
Acme Rubber Mfg. Co., Trenton.

Air Brake Hose—Continued.

B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Belting (Canvas).

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Eureka Fire Hose Co., New York.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston-New York.

Billiard Cushions.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Manhattan Rubber Mfg. Co., New York.
New York Belting & Packing Co., Ltd.
New York Rubber Co., New York.
Revere Rubber Co., Boston-New York.

Blankets—Printers'.

Peerless Rubber Mfg. Co., New York.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.

Blankets—Printers'.—Continued.

Gutta Percha & Rubber Mfg. Co., N. Y.
Hodgman Rubber Co., New York.
Gustave Kush, New York.
Revere Rubber Co., Boston-New York.
Voorhees Mfg. Co., Jersey City.

Brushes.

Boston Woven Hose & Rubber Co.
C. J. Bailey & Co., Boston.

Buffers.

Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston, Mass.

Card Cloths.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.

Carriage Mats.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
National India Rubber Co., Bristol, R. I.

RUBBER BUYERS' DIRECTORY—Continued.

Carriage Mats.—Continued.

N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Cord (Pure Rubber).

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Deckle Straps.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Mechanical Rubber Co., Chicago.
New York Belting & Packing Co., N. Y.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Door Springs.

Hodgman Rubber Co., New York.

Dredging Sleeves.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
N. J. Car Spring & Rubber Co., Jersey City.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston, Mass.

Force Cups.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Fruit Jar Rings.

Acme Rubber Mfg. Co., Trenton.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Empire Rubber Mfg. Co., Trenton, N. J.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
New York Belting & Packing Co., N. Y.

Fuller Balls.

B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.

Gage Glass Washers.

Boston Belting Co., Boston, Mass.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Electric Hose & Rubber Co., Wilmington, Del.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago, Ill.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Revere Rubber Co., Boston, Mass.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Gas-Bags (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Tyer Rubber Co., Andover, Mass.
Voorhees Rubber Mfg. Co., Jersey City.

Gasket Tubing.

Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Jenkins Bros., New York.
National India Rubber Co., Bristol, R. I.
New Jersey Car Spring & Rubber Co.
Revere Rubber Co., Boston.

"Gibraltar" Sheet Packing.

New Jersey Car Spring & Rubber Co.

Grain Drill Tubes.

Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Hat Bags.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mattson Rubber Co.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Horse Shoe Pads.

Canadian Rubber Co. of Montreal.
Home Rubber Co., Trenton, N. J.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Armored.

Hose—Wire Wound.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Electric Hose & Rubber Co., Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Core.

Alderfer Crate Co., Sharon Center, O.

Hose Couplings and Fittings.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Hose Linings.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston.

Hose—Protected.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Electric Hose & Rubber Co., Wilmington, Del.
Gutta Percha & Rubber Mfg. Co., N. Y.

Hose Protected.—Continued.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Hose Racks and Reels.

Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Wirt & Knox Mfg. Co., Philadelphia.

Hose—Rubber Lined.

Cotton and Linen.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Gutta Percha & Rubber Mfg. Co., N. Y.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Eureka Fire Hose Co., New York.
Fabric Fire Hose Co., New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
Jos. Stokes Rubber Co., Trenton, N. J.
Voorhees Rubber Mfg. Co., Jersey City.

Hose—Submarine.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Electric Hose & Rubber Co., Wilmington, Del.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.

"Jenkins '96" Packing.

Jenkins Bros., New York.

Lawn Sprinklers.

Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.

Mallets (Rubber).

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Bristol, R. I.
Peerless Rubber Mfg. Co., New York.
Revere Rubber Co., Boston-New York.

Mould Work.

(See Mechanical Rubber Goods.)

H. O. Canfield Co., Bridgeport, Ct.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
Laurel Rubber Co., Garfield, N. J.
Mattson Rubber Co., New York.
Mitzel Rubber Co., Akron, O.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.
Western Rubber Works, Goshen, Ind.

"Nubian" Packing.

Voorhees Rubber Mfg. Co., Jersey City.

Oil Well Supplies.

Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Lake Shore Rubber Co., Erie, Pa.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.

Oil Well Supplies.—Continued.

Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-Pittsburgh.
Voorhees Rubber Mfg. Co., Jersey City.

Paper Machine Rollers.

Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Plumbers' Supplies.

Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Ct.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Pump Valves.

(See Mechanical Rubber Goods.)

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Jenkins Bros., New York.
Revere Rubber Co., Boston, Mass.
Western Rubber Works, Goshen, Ind.

Rollers—Rubber Covered.

Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.

Sewing Machine Rubbers.

B. F. Goorich Co., Akron, O.

Springs—Rubber.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City.
Peerless Rubber Mfg. Co., New York.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Stair Treads.

Acme Rubber Mfg. Co., Trenton.
Boston Belting Co., Boston-New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co., of Montreal.
Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston-New York.
Voorhees Rubber Mfg. Co., Jersey City.

Thread.

B. F. Goodrich Co., Akron, O.
Mechanical Fabric Co., Providence, R. I.
Revere Rubber Co., Boston.

Tiling.

Anchor Tile Co., Trenton, N. J.
Canadian Rubber Co., of Montreal, Ltd.
B. F. Goodrich Co., Akron, O.
Gutta Percha & Rubber Mfg. Co., N. Y.

RUBBER BUYERS' DIRECTORY—Continued.

Tiling.—Continued.

The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
N. J. Car Spring & Rubber Co., Jersey City.
New York Belting & Packing Co., N. Y.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Voorhees Rubber Mfg. Co., Jersey City.

Tubing.

(See Mechanical Rubber Goods.)
American Hard Rubber Co., New York.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Laurel Rubber Co., Garfield, N. J.
Plymouth Rubber Co., Stoughton, Mass.
New Jersey Car Spring & Rubber Co.
Tyer Rubber Co., Andover, Mass.

Valve Balls.

Boston Belting Co., Boston.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Manhattan Rubber Mfg. Co., New York.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
New York Rubber Co., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Revere Rubber Co., Boston.

Valve Discs.

American Hard Rubber Co., New York.
Boston Belting Co., Boston-New York.
B. F. Goodrich Co., Akron, O.
Jenkins Bros., New York.
Peerless Rubber Mfg. Co., New York.
Republic Rubber Co., Youngstown, O.
Western Rubber Works, Goshen, Ind.

Valves.

(See Mechanical Rubber Goods.)
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Jenkins Bros., New York-Chicago.
New Jersey Car Spring & Rubber Co.

Vulcanite Emery Wheels.

Manhattan Rubber Mfg. Co., Passaic, N. J.
New York Belting & Packing Co., Ltd., New York.

Wringer Rolls.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Home Rubber Co., Trenton, N. J.
Republic Rubber Co., Youngstown, O.
Druggists' and Stationers' Sundries.

DRUGGISTS' AND STATIONERS' SUNDRIES.

Atomizers.

Bandages.

Bulbs.

Syringes.

Water Bottles.

Druggists' Sundries—General.

American Hard Rubber Co., New York.
C. J. Bailey & Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Est. of Jos. Bacharach, Brooklyn, N. Y.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Hygeia Nursing Bottle Co., Buffalo, N. Y.
Imperial Rubber Co., Beach City, O.
Mitzel Rubber Co., Akron, O.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Balls, Dolls and Toys.

New York Rubber Co., New York.

Combs.

American Hard Rubber Co., New York.

Elastic Bands.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Tyer Rubber Co., Andover, Mass.

Erasive Rubbers.

Davidson Rubber Co., Boston.
B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., New York.

Finger Cots.

Baumann Rubber Co., New Haven, Ct.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Mfg. Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barberton, O.

Gloves.

Canadian Rubber Co. of Montreal.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
Pure Gum Specialty Co., Barberton, O.

Hard Rubber Goods.

American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
H. O. Canfield Co., Bridgeport, Ct.
Davol Rubber Co., Providence, R. I.
Stokes Rubber Co., Joseph, Trenton, N. J.
Tyer Rubber Co., Andover, Mass.

Hospital Sheetings.

Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.
Plymouth Rubber Co., Stoughton, Mass.
Tyer Rubber Co., Andover, Mass.

Ice Bags and Ice Caps.

Est. of Jos. Bacharach, Brooklyn, N. Y.
Baumann Rubber Co., New Haven, Ct.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
National India Rubber Co., Bristol, R. I.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Life Preservers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Nipples.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
Hygeia Nursing Bottle Co., Buffalo, N. Y.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

Shower Bath Sprinklers.

A. Schrader's Son, Inc., New York.

Sponges (Rubber).

Faultless Rubber Co., Ashland, O.

Stationers' Sundries.

American Hard Rubber Co., New York.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cincinnati Rubber Mfg. Co., Cincinnati, Ohio.
Cleveland Rubber Co., Cleveland, O.
Davidson Rubber Co., Boston.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York-Boston.
Seamless Rubber Co., New Haven, Ct.
Tyer Rubber Co., Andover, Mass.

Stopples (Rubber).

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Hodgman Rubber Co., New York.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
New York Belting & Packing Co., N. Y.
A. Schrader's Sons, Inc., New York.
Tyer Rubber Co., Andover, Mass.

Throat Bags.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich, Akron, O.
National India Rubber Co., Bristol, R. I.
Tyer Rubber Co., Andover, Mass.

Tobacco Pouches.

Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Co., Akron, O.
The Rubber Products Co., Barberton, O.
Tyer Rubber Co., Andover, Mass.

MACKINTOSHED AND SURFACE GOODS.

Air Goods (Rubber).

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
New York Rubber Co., New York.
National India Rubber Co., Providence.
Tyer Rubber Co., Andover, Mass.

Air Mattresses.

Canadian Rubber Co. of Montreal.
Mechanical Fabric Co., Providence, R. I.
National India Rubber Co., Bristol, R. I.

Barbers' Bibs.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
Tyer Rubber Co., Andover, Mass.

Bathing Caps.

Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.

Bellows Cloths.

Boston Rubber Co., Boston.
Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
La Cross (Wis.) Rubber Mills Co.

Calendering.

La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Carriage Ducks and Drills.

Cleveland Rubber Co., Cleveland, O.
Empire Rubber Mfg. Co., Trenton, N. J.
Gutta Percha & Rubber Mfg. Co., Toronto.
National India Rubber Co., Bristol, R. I.

Clothing.

Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hodgman Rubber Co., New York.
La Crosse (Wis.) Rubber Mills Co.
National India Rubber Co., Bristol, R. I.
North British Rubber Co., Ltd., Edinburgh.
Pirelli & Co., Milan, Italy.

Cravenette.

Cravenette Co., Ltd.

Diving Apparatus.

A. Schrader's Son, Inc., New York.

Diving Dresses.

Hodgman Rubber Co., New York.

Dress Shields.

Mattson Rubber Co., New York.

Horse Covers.

Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Leggings.

Cleveland Rubber Co., Cleveland, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Mackintoshes.

(See Clothing.)

Proofing.

Canadian Rubber Co. of Montreal.
La Crosse (Wis.) Rubber Mills Co.
Plymouth Rubber Co., Stoughton, Mass.

Rain Coats.

Cravenette Co., Ltd.

Rubber Coated Cloths.

Mechanical Fabric Co., Providence, R. I.

RUBBER FOOTWEAR.

Boots and Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Canadian Rubber Co. of Montreal.
L. Candee & Co., New Haven, Ct.
B. F. Goodrich Co., Akron, O.
Granby Rubber Co., Granby, Quebec.
Gutta Percha & Rubber Mfg. Co. of Toronto.
Hood Rubber Co., Boston.
Lycoming Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New York.
National India Rubber Co., Boston.
North British Rubber Co., Ltd., Edinburgh.
United States Rubber Co., New York.
Wales-Goodyear Rubber Co., Boston.
Woonsocket Rubber Co., Providence.

Heels and Soles.

Ajax Grieb Rubber Co., Trenton, N. J.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Continental Caoutchouc & Guttapercha Co., Hanover.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Plymouth Rubber Co., Stoughton, Mass.
Western Rubber Works, Goshen, Ind.

Tennis Shoes.

American Rubber Co., Boston.
Boston Rubber Shoe Co., Boston.
Granby Rubber Co., Granby, Quebec.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
La Crosse Rubber Mills Co., La Crosse, Wis.
National India Rubber Co., Providence.
United States Rubber Co., New York.

Wading Pants.

Canadian Rubber Co. of Montreal.
Hodgman Rubber Co., New York.

DENTAL AND STAMP RUBBER.

Dental Gum.

American Hard Rubber Co., New York.
Cleveland Rubber Co., Cleveland, O.
Tyer Rubber Co., Andover, Mass.

Rubber Dam.

Cleveland Rubber Co., Cleveland, O.
Davol Rubber Co., Providence, R. I.
B. F. Goodrich Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Stamp Gum.

B. F. Goodrich Co., Akron, O.
Mattson Rubber Co., New York.
Mechanical Rubber Co., Chicago, Ill.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

ELECTRICAL.

Electrical Supplies.

American Hard Rubber Co., New York.
Lake Shore Rubber Co., Erie, Pa.
Joseph Stokes Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Tyer Rubber Co., Andover, Mass.

RUBBER BUYERS' DIRECTORY—Continued.

Friction Tape.
Boston Belting Co., Boston.
Boston Woven Hose & Rubber Co.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
B. F. Goodrich Rubber Co., Akron, O.
Home Rubber Co., Trenton, N. J.
Massachusetts Chemical Co., Boston.
Mechanical Rubber Co., Chicago.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston-New York.

Hard Rubber Goods.
American Hard Rubber Co., New York.
Canadian Rubber Co. of Montreal.
Joseph Stokes Rubber Co., Trenton, N. J.

Insulating Compounds.
Canadian Rubber Co. of Montreal.
Gutta-Percha & Rubber Mfg. Co., Toronto.
Massachusetts Chemical Co., Boston.

Insulated Wire and Cables.
National India Rubber Co., Providence.

Splicing Compounds.
Home Rubber Co., Trenton, N. J.

SPORTING GOODS.

Foot Balls.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Rubber Co., Akron, O.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Golf Balls.
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
Davidson Rubber Co., Boston.
B. F. Goodrich Rubber Co., Akron, O.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.

Sporting Goods.
Canadian Rubber Co. of Montreal.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Rubber Co., Akron, O.
Hodgman Rubber Co., New York.
Tyer Rubber Co., Andover, Mass.

Striking Bags.
Canadian Rubber Co. of Montreal.
Cleveland Rubber Co., Cleveland, O.
Faultless Rubber Co., Akron, O.
B. F. Goodrich Rubber Co., Akron, O.
Pure Gum Specialty Co., Barberton, O.

Submarine Outfits.
Hodgman Rubber Co., New York.

MISCELLANEOUS.

Boiler Specialist.
H. W. Jones, New York.

Cement (Rubber).
Boston Belting Co., Boston.
Canadian Rubber Co. of Montreal.
B. F. Goodrich Rubber Co., Akron, O.
Hadley Cement Co., Lynn, Mass.
Manhattan Rubber Mfg. Co., New York.
N. J. Car Spring & Rubber Co., Jersey City, N. J.
New York Belting & Packing Co., N. Y.

Chemical Analyses.
Durand Woodman, Ph.D., New York.
H. L. Terry, Manchester, England.

Chemical and Mechanical Engineer.
Charles E. Farrington, Boston.

Chemists.
Stephen P. Sharples, Boston, Mass.
Durand Woodman, Ph.D., New York.

Engraver.
P. C. Smith, Boston, Mass.

Railways.
Acme Rubber Mfg. Co., Trenton.

Rubber Journals.
Gummi-Zeitung, Dresden, Germany.

Rubber Planting.
Batavia Company, Batavia, N. Y.
Ohio Rubber Culture Co., Canton, O.

Rubber Tree Seeds.
J. P. William & Bros., Heneratgoda, Ceylon.

MACHINERY AND SUPPLIES FOR RUBBER MILLS.

RUBBER MACHINERY.

Acid Tanks.
Birmingham Iron Foundry, Derby, Conn.

Band Cutting Machine.
A. Adamson, Akron, O.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.

Belt Folding Machines.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Slitters.
Cloth Dryers.
Gearing.
Shafting.

Wrapping Machines.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Belt Stretchers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
Hoggson & Pettis Mfg. Co., New Haven.

Boilers.
William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Braiders.
New England Butt Co., Providence, R. I.
Textile Machine Works, Reading, Pa.

Buckles.
The Weld Mfg. Co., Boston.

Cabling Machinery.
Alton Machine Co., New York.

Calenders.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
Textile-Finishing Machinery Co., Providence, R. I.
Textile Machine Works, Reading, Pa.

Castings.
A. Adamson, Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Chucks (Lathe).
Hoggson & Pettis Mfg. Co., New Haven.

Churns.
American Tool & Machine Co., Boston.

Clutches.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Crackers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.

Devulcanizers.
Alton Machine Co., New York.
Biggs Boiler Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Edred W. Clark, Hartford, Conn.
William R. Thropp, Trenton, N. J.

Dies.
John J. Adams, Worcester, Mass.
Barbour Bros., Trenton, N. J.
T. J. Beaudry, Marlboro, Mass.
Brockton Die Co., Brockton, Mass.
Hoggson & Pettis Mfg. Co., New Haven.
Independent Die Co., Brockton, Mass.
Joseph E. Knox & Co., Lynn, Mass.

Doubling Machines.
American Tool & Machine Co., Boston.

Drying Apparatus.
American Process Co., New York.

Drying Machines.
Alton Machine Co., New York.
Joseph P. Devine, Buffalo, N. Y.
Birmingham Iron Foundry, Derby, Conn.
Textile-Finishing Machinery Co., Providence, R. I.

Embossing Calenders.
Textile-Finishing Machinery Co., Providence, R. I.

Engines, Steam.
Alton Machine Co., New York.
William R. Thropp, Trenton, N. J.
John E. Thropp & Sons Co., Trenton, N. J.

Engraving Roll.
Hoggson & Pettis Mfg. Co., New Haven.

Grinders and Mixers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
William R. Thropp, Trenton, N. J.

Hangers.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Hose Machines.
A. Adamson, Akron, O.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

Hydraulic Accumulators.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Insulating Machinery.
Textile Machine Works, Reading, Pa.

Iron Castings.
Alton Machine Co., New York.

Lasts (Rubber Shoe).
Middlesex Last Co., Boston.

Lathes—Hard Rubber.
A. Adamson, Akron, O.

Lathes—Jar Ring.
A. Adamson, Akron, O.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.
William R. Thropp, Trenton, N. J.

Machinists' Tools.
Hoggson & Pettis Mfg. Co., New Haven.

Moulds.
A. Adamson, Akron, O.
Alton Machine Co., New York.
W. E. Arnold, Malden, Mass.
Barbour Bros., Trenton, N. J.
Birmingham Iron Foundry, Derby, Conn.
H. O. Canfield Co., Bridgeport, Conn.
Hoggson & Pettis Mfg. Co., New Haven

Pillow Blocks.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Presses (for Rubber Work).
A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse, N. Y.
Edred W. Clark, Hartford, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
William R. Thropp, Trenton, N. J.

Pumps.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.
Boomer & Boschert Press Co., Syracuse.
Farrel Foundry & Mach. Co., Ansonia, Conn.

Racks for Boot and Shoe Cars.
Hoggson & Pettis Mfg. Co., New Haven.

Reducing Valves.
Mason Regulator Co., Boston.

Rollers (Hand).
Hoggson & Pettis Mfg. Co., New Haven.

Rubber Covering Machines.
Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Rubber Growers' Utensils.
Cement Cans and Tanks.
American Can Co., New York.
Repairing Kit Boxes.
American Can Co., New York.

Separators.
Turner, Vaughan & Taylor Co., Cuyahoga Falls, O.

Separators for Reclaimed Rubber.
American Process Co., New York.

Special Rubber Machinery.
Alton Machine Co., New York.
Wellman Sole Cutting Machine Co., Medford, Mass.

Spreaders.
Alton Machine Co., New York.
American Tool & Machine Co., Boston.
Birmingham Iron Foundry, Derby, Conn.
New England Butt Co., Providence, R. I.

Steam Traps and Specialties.
Jenkins Bros., New York.
Mason Regulator Co., Boston.
Osgood Sayen, Philadelphia, Pa.

Steel Stamps.
Hoggson & Pettis Mfg. Co., New Haven.

Stitchers (Hand).
Hoggson & Pettis Mfg. Co., New Haven.

Strip Covering Machines.
Strip Cutters.
Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Tire Molds.
Bay State Machine Co., Erie, Pa.

Tubing Machines.
A. Adamson, Akron, O.
Alton Machine Co., New York.
Bay State Machine Co., Erie, Pa.
Edred W. Clark, Hartford, Conn.
John Royle & Sons, Paterson, N. J.
Textile Machine Works, Reading, Pa.

Vacuum Drying Chambers.
Alton Machine Co., New York.
Joseph P. Devine Co., Buffalo, N. Y.

Varnishing Machines.
Birmingham Iron Foundry, Derby, Conn.

Vulcanizers.
Alton Machine Co., New York.
Biggs Boiler Works Co., Akron, O.
Birmingham Iron Foundry, Derby, Conn.
Farrel Foundry & Mach. Co., Ansonia,
John E. Thropp's Sons Co., Trenton, N. J.
William R. Thropp, Trenton, N. J.

Washers.
Alton Machine Co., New York.
Birmingham Iron Foundry, Derby, Conn.
H. O. Canfield Co., Bridgeport, Conn.
Farrel Foundry & Mach. Co., Ansonia, Conn.
William R. Thropp, Trenton, N. J.
Turner, Vaughn & Taylor Co., Cuyahoga Falls, O.

Wire Insulating Machines.
Alton Machine Co., New York.
New England Butt Co., Providence, R. I.

Wire Rope Machinery.
Alton Machine Co., New York.

SECOND-HAND MACHINERY.

Philip Broomfield, Boston, Mass.
W. C. Coleman Co., Rochelle Park, N. J.
Philip McGrory, Trenton, N. J.
M. Norton & Co., Charlestown, Mass.

FACTORY SUPPLIES.

Acid (Carbolic).
Barrett Mfg. Co., Philadelphia.

Antimony, Sulphurets of.
Golden.
Actien-Ges. Georg Egestorff's Salzwerke, Linden, Germany.
Atlas Chemical Co., Newtonville, Mass.
Golden and Crimson.
Joseph Cantor, New York.
Geo. F. Lufbery, Jr., Elizabeth, N. J.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

MACHINERY AND SUPPLIES FOR RUBBER MILLS—Continued.

Balata.
George A. Alden & Co., Boston.
Raw Products Co., New York.

Benzol.
Barrett Mfg. Co., Philadelphia.
Samuel Cabot, Boston.

Black Hypo.
Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.

Boxes (Wood).
Henry H. Shelp & Co., Philadelphia.

Brass Fittings.
A. Schrader's Son, Inc., New York.

Carbon Bisulphide.
George W. Spealght, New York.

Caustic Soda.
Acker Process Co., Niagara Falls, N. Y.

Chemicals.
Acker Process Co., Niagara Falls, N. Y.
George W. Spealght, New York.
S. P. Wetherill Co., Philadelphia, Pa.

Colors.
Joseph Cantor, New York.
William H. Scheel, New York.
Typke & King, London, England.
S. P. Wetherill Co., Philadelphia, Pa.

Crude Rubber.
George A. Alden & Co., Boston.
A. W. Brunn & Co., New York.
Walter L. Gough & Co., New York.
Hagermeyer & Brunn, New York.
Adolph Hirsch & Co., New York.
Para Recovery Co., Bayonne, N. J.
Raw Products Co., New York.
Rubber Trading Co., New York-Boston.

Dermatine.
The Dermatine Co., London.

Ducks and Drills (Cotton).
J. H. Lane & Co., New York.

Gilsonite.
William H. Scheel, New York.

Graphite.
United States Graphite Co., Philadelphia.

Graphite Grease.
Jos. Dixon Crucible Co., Jersey City.

Guayule Rubber.
Continental Rubber Co.
Ed. Maurer, New York.

Gutta-Percha.
George A. Alden & Co., Boston.
Raw Products Co., New York.
Rubber Trading Co., New York-Boston.

Hose Bands, Straps & Menders.
Boston Woven Hose & Rubber Co.
William Yerdon, Fort Plain, N. Y.

Hose Pipes, Nozzles & Couplings.
Boston Woven Hose & Rubber Co.
Eureka Fire Hose Co., New York.
Revere Rubber Co., Boston.
A. Schrader's Son, Inc., New York.

Hydro-Carbon Products.
Geo. A. Alden & Co., Boston.
William H. Scheel, New York.

Infusorial Earth.
Stamford (Conn.) Rubber Supply Co.

Lampblack.
Samuel Cabot, Boston.

Lawn-Hose Supporters.
C. J. Bailey & Co., Boston.

Lead—Blue.

Lead—Sublimed White.
Picher Lead Co., Chicago, Ill.

Lithopone.
Gabriel & Schall, New York.

Paris White and Whiting.
H. F. Taintor Mfg. Co., New York.

Recording Thermometers.
Bristol Co., New York.

Reclaimed Rubber.
Aladdin Rubber Co., Akron, O.
Alkali Rubber Co., Akron, O.
American Reclaimed Rubber Co., Rochelle Park, N. J.
F. H. Appleton & Son, Boston.
Bloomingdale (N. J.) Soft Rubber Co.
E. H. Clapp Rubber Co., Boston, Mass.
Danversport Rubber Co., Boston.
Derby Rubber Co., Derby, Conn.
Eastern Rubber Co., New York.
Trenton (N. J.) Rubber Reclaiming Works.
Manufactured Rubber Co.
New Jersey Rubber Co., Lambertville, N. J.
Pequanoc Rubber Co., Butler, N. J.
Philadelphia Rubber Works, Philadelphia.
Stockton Rubber Co., Stockton, N. J.
Jos. Stokes Rubber Co., Trenton, N. J.
S. & L. Rubber Co., Chester, Pa.
U. S. Rubber Reclaiming Works, N. Y.
Westmoreland Rubber Mfg. Co., Grapeville, Pa.

Agents and Dealers.
Goldberg & Rathman, Boston, Mass.
Philip McGrory, Trenton, N. J.
H. P. Moorhouse, Paris, France.
Rubber Trading Co., New York-Boston.
Wm. Somerville's Sons, Liverpool.

Scrap Rubber.
L. Albert & Son, Trenton, N. J.
Bers & Co., Philadelphia.
P. Broomfield & Co., Boston.
C. Clifford, Baltimore, Md.
Wm. H. Cummings & Sons, New York.
Goldberg & Rathman, Boston, Mass.
Theodore Hofeller & Co., Buffalo, N. Y.
A. W. Leslie & Co., Ltd., London, Eng.
B. Loewenthal & Co., New York and Chicago.
J. Loewenthal & Sons, Chicago.
Philip McGrory, Trenton, N. J.
Meyer Bros., Philadelphia, Pa.

Scrap Rubber.—Continued.
Trenton (N. J.) Rubber Reclaiming Works.
M. Norton & Co., Charlestown, Mass.
San Giacomo Sons, Newark, N. J.
J. Schnurmann, London.
Schwab & Co., Philadelphia.
Trenton Scrap Rubber Supply Co., Trenton, N. J.
United States Waste Rubber Co., Brockton, Mass.
M. J. Wolpert, Odessa, Russia.

Substitute.
Joseph Cantor, New York.
Carter Bell Mfg. Co., New York.
Geo. P. Lufbery, Jr., Elizabeth, N. J.
Massachusetts Chemical Co., Boston.
The Rubber Chemical Co., Birmingham, England.
Wm. H. Scheel, New York.
Stamford (Conn.) Rubber Supply Co.
Typke & King, London, England.

Sulphur.
Battelle & Renwick, New York.
T. & S. C. White Co., New York.

Sulphur Chloride.
Acker Process Co., Niagara Falls, N. Y.
William H. Scheel, New York.
George W. Spealght, New York.
Stamford (Conn.) Rubber Supply Co.

Tire Fabrics.
J. H. Lane & Co., New York.

Tire Valves.
A. Schrader's Son, Inc., New York.

Valves for Air Goods.
A. Schrader's Son, Inc., New York.

Zinc Substitute.
Aluminum Flake Co., Akron, O.

Zinc Sulphide.
Joseph Cantor, New York.
Typke & King, London, England.

Zinc White.
New Jersey Zinc Co., New York.
Stamford (Conn.) Rubber Supply Co.

BUYERS' DIRECTORY FOR RUBBER TIRES AND ACCESSORIES.

Auto Top Fabrics.
Hodgman Rubber Co., New York.
National India Rubber Co., Bristol, R. I.

Fabrics.
Lane & Co., J. H., New York.
National India Rubber Co., Bristol, R. I.

Flanges and Rings.
The A. Dewes Co., New York.

Insulated Wires.
National India Rubber Co., Bristol, R. I.

Mats, Automobile.
Boston Woven Hose & Rubber Co., Cambridge, Mass.
The Gutta Percha & Rubber Mfg. Co., of Toronto, Ltd.
Manhattan Rubber Mfg. Co., New York.
National India Rubber Co., Bristol, R. I.
Revere Rubber Co., Boston, Mass.

Repair Stock.
Trenton Rubber Mfg. Co., Trenton, N. J.

Rims, Wheel.
Goodrich Co., B. F., Akron, Ohio.

Tires.
Bailey & Co., C. J., Boston, Mass.
Canadian Rubber Co., of Montreal, Ltd.
Continental Caoutchouc Co., New York.
Dunlop Tire & Rubber Goods Co., Toronto.
Empire Rubber Mfg. Co., Trenton, N. J.
Goodrich Co., B. F., Akron, Ohio.
Gutta Percha & Rubber Mfg. Co., Toronto.
Kokomo Rubber Co., Kokomo, Ind.
Lake Shore Rubber Co., Erie, Pa.
North British Rubber Co., Ltd., Edinburgh, Scotland.
Pirelli & Co., Milan, Italy.
Plymouth Rubber Co., Stoughton, Mass.
Republic Rubber Co., Youngstown, Ohio.
Trenton Rubber Mfg. Co., Trenton, N. J.

Automobile and Carriage.
Boston Belting Co., Boston-New York.
Eureka Rubber Mfg. Co., Trenton, N. J.
Revere Rubber Co., Boston-New York.

Tire Fabrics.
Lane & Co., J. H., New York.

Tire Repairing.
Voorhees Rubber Mfg. Co., Jersey City, N. J.

Treads.
Boston Woven Hose & Rubber Co., Cambridge, Mass.
Manhattan Rubber Mfg. Co., New York.
Revere Rubber Co., Boston, Mass.

Valves, Tire.
Schrader's Sons, Inc., A., New York.

Wires, Insulated.
National India Rubber Co., Bristol, R. I.